ALPINE®

SERVICE MANUAL

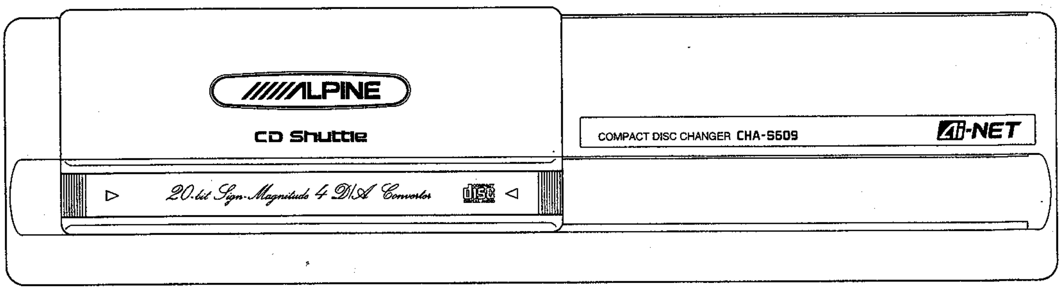
Compact Disc Remote Changer

CD Shuttle

COMPACT disc DIGITAL AUDIO

- The model described in this manual is developed from Model 5959S.
  For information that is not mentioned in this service manual, refer to the Service Manual 5959S (68P41911W01).
- For the CD deck mechanism parts (DR24A050) of this model, refer to the Service Manual • DR Series (68P30571W04).

- 当モデルは、5959Sがベースモデルとなっております。このマニュアルは相違点のみを記載しておりますので、詳細については、5959S (68P50246W01) のサービスマニュアルを参照願います。
- 本機のCDメカニズム (DR24A050) についての資料は、サービスマニュアル・DRシリーズ (68P30570W04) を参照願います。


ALPINE
CD Shuttle
COMPACT DISC CHANGER CHA-S609
Ai-NET
20-bit Sign-Magnitude 4 D/A Convertor

Ai-NET

CHA-S609

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Disassembly Instructions
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Adjustment Locations

Refer to the Service Manual 5959S (68P41911W01).
サービスマニュアル5959S (68P50246W01)を参照願います。

Specifications

Note : Refer to the Service Manual · 5959S (68P41911W01) for description not mentioned in this manual.
※ 記載されていない部品については、サービスマニュアル· 5959S (68P50246W01) を参照願います。

<CD SECTION>

Distortion (997Hz)	0.007%

<GENERAL>

Output Voltage / Impedance	850±150mV / 10k ohm (DIN) 1000±170mV / 10k ohm (RCA)

Note : Due to continuing product improvement, specifications and designs are subject to change without notice.
●上記の規格および外観は、改良の為、予告なく変更することがあります。

取付ける前に

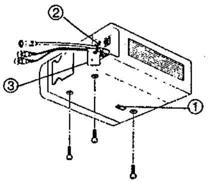


図1 /Fig. 1/Abb. 1

● **輸送用ネジについて (図1)**
輸送中、製品を保護するために底面にネジ3本が取り付けてあります。本機を取付ける前に必ず底面のシステム切りかえスイッチを切りかえてから、このネジを取り外してください。取り外したネジはなくさないよう本機付属の専用ビニール袋に保管し、ネジ穴は付属の防塵シールでふさいでください。
①システム切りかえスイッチ
②取付バンド
③専用ビニール袋

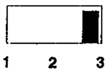


図2 /Fig. 2/Abb. 2

● **製品底面部スイッチ (システム切りかえスイッチ) について (図2)**
組み合わせる製品によってシステム切りかえスイッチを切りかえる必要があります。スイッチの切りかえは必ず輸送用ネジを外す前 (接続前) におこなってください。

1. Ai-NET対応ではない製品と組み合わせる場合。
2. Ai-NET対応製品と組み合わせ、光デジタル出力を使用する場合。
3. Ai-NET対応製品と組み合わせ、光デジタル出力を使用しない場合。

詳しい接続については接続の項をお読みください。
付属の切りかえ棒で切りかえてください。

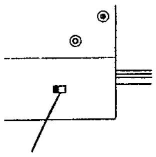


図3 /Fig. 3/Abb. 3

● **デジタル出力ON/OFF切りかえスイッチ (図3)**
このスイッチは、デジタル出力のON/OFF切りかえに使用します。デジタル出力を使わないシステムのときは、必ずOFF状態にしておいてください。

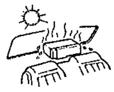


図4 /Fig. 4/Abb. 4

● **取付け場所について (図4)**
車のリア・トレイなど、高温になる所への取付けは故障の原因となりますので取付けないでください。また次のような場所に取付けることもお避けください。

- 直射日光の当たる場所、ヒーターの熱風を直接受ける場所など、温度が極端に高い所。
- しっかりとした取付けができない、振動の多い所。
- 湿気の多い場所や、ほこりの多い場所。
- 車の運転の支障をきたす場所。

接続方法

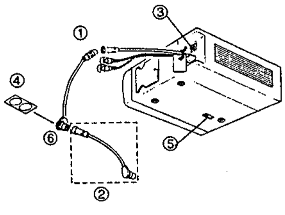


図5 /Fig. 5/Abb. 5

①Ai-NETケーブル (本製品付属)
本機のコントロール機能をもった製品のコネクターと付属しているケーブルを使用し、接続します。(図5)
②変換ケーブル (本製品付属-2種類/濃紺・グレー)
組み合わせる製品及びコネクター形状に応じて付属の変換ケーブルを使用してください。(図5)
③デジタル出力端子
光学式デジタル対応製品のデジタル入力端子に光ファイバー・ケーブルを使用し、接続します。(図5)
④入出力識別シール
Ai-NET接続時に接続する製品のコネクターと同じ色のシールを延長ケーブルのコネクターへ貼り付けてください。(図5)
⑤システム切りかえスイッチ
⑥L型コネクター

ご注意

- 本製品と5953(CDシャトル・コントロール・システム)を組み合わせたとき、5953のP.T.M.機能は動作しません。

Before Installation

Shipping Screws (Fig. 1)
Three screws have been used to stabilize the mechanism during transit. They can be seen from the bottom of the unit. Before installing the CHA-S609 into the vehicle, make sure the System Switch has been properly set. Once the switch is set the transit screws may be removed. Place the screws in the plastic bag provided so as not to misplace them. Finally, place the self-adhesive stickers over the transit screw holes to prevent dust from entering the mechanism.
① System Switch
② Binder
③ Plastic Bag

Setting the System Switch (Fig. 2)
Depending upon the system configuration the CHA-S609 will be connected to, the System Switch must be set accordingly. Be sure to set this switch before removing the transit screws.

1. When using the unit in combination with a product not using the Ai-NET system.
2. When using the unit in combination with the Ai-NET system and using the optical digital output.
3. When using the unit in combination with the Ai-NET system and not using the optical digital output.

For further details, refer to Connections.
Use the special tool (Switching Shaft) provided to change the System Switch settings.

Setting the Digital Output ON/OFF Switch (Fig. 3)
The switch is used for switching the digital output ON/OFF. With the system not using the digital output, be sure to set the switch to OFF position.

Installation Location (Fig. 4)
Never install the Shuttle on the rear or front deck of car as direct sun and high temperature may cause damage to the Shuttle. The Alpine Warranty will be voided if the Shuttle is installed on the rear or front deck of the car and becomes damaged.

Connections

① Ai-NET Cable (Included in the CHA-S609)
The Ai-NET cable provided, allows connection to any Alpine Ai-NET compatible, CD Shuttle Controller. Make sure that the "L" type connector of the Ai-NET cable is attached to the Controller and the straight connector is attached to the CHA-S609. (Fig. 5)
② Ai-NET Conversion Cable (2: Dark blue/Gray) (Included in the CHA-S609)
The Ai-NET conversion cable provided, allows connection to an Alpine CD Shuttle Controller which is not Ai-NET compatible. Make sure that the "L" type connector of the conversion cable is attached to the Controller. The Ai-NET cable from the CHA-S609 will then be attached to the straight connector from the Controller. (Fig. 5)
NOTE:
The System Switch must be in Position 3 when using this cable.
③ Digital Output Terminal
This terminal may be used to connect the CHA-S609 to other Alpine digital products, incorporating optical digital inputs. These products include a fiber optic cable that will plug directly into the Digital Output Terminal of the CHA-S609. (Fig. 5)
NOTE:
When using the Digital Output of the CHA-S609, the System Switch needs to be in either Position 2 or Position 3.
④ Input/Output Identification Label
Place a label that matches the color of the connector onto the connector. This will identify the Input or Output connector when used with optional extensions. (Fig. 5)
⑤ System Switch
⑥ "L" Type Connector

NOTE:

- When the CHA-S609 is used in combination with the Alpine model 5953 (CD Changer Controller), the P.T.M. function (Preferred Track Memory) will be disabled.

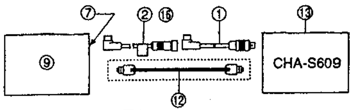


図6 /Fig. 6/Abb. 6

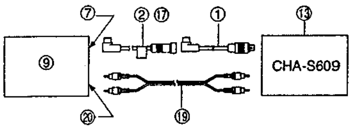


図7 /Fig. 7/Abb. 7

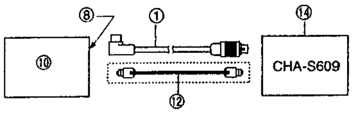


図8 /Fig. 8/Abb. 8

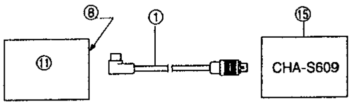


図9 /Fig. 9/Abb. 9

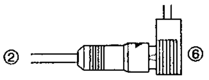


図10/Fig. 10/Abb. 10

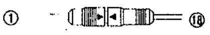


図11/Fig. 11/Abb. 11

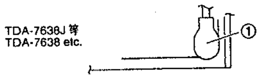


図12/Fig. 12/Abb. 12

● 本製品は、Ai-NETシステム／従来バスシステムそれぞれに対応することができます。

1. 従来のバスシステムで使用する場合 (図6)
Audioラインあり変換ケーブル (濃紺)：7620J/7618J以外の製品用としてご使用ください。(Ai-NET製品は除く)
光学式デジタル対応機器との接続も可能です。

2. 従来のバスシステムで使用する場合 (図7)
Audioラインなし変換ケーブル (グレー)：7620J/7618J用としてご使用ください。

3. Ai-NETシステムで使用する場合 (光デジタル対応製品と組み合わせる) (図8)
5981/5907/1403を接続する場合には4315が必要となります。(接続方法は4315の「取扱説明書」をご覧ください。)

4. Ai-NETシステムで使用する場合 (光デジタル対応製品と組み合わせない) (図9)
5981/5907/1403を接続する場合には4315が必要となります。(接続方法は4315の「取扱説明書」をご覧ください。)

ご注意
- ケーブルは図を参考に接続してください。まちがった接続は、破損の原因になりますのでご注意願います。
- ケーブルをよく確かめ、ケーブルに付いているラベルをよく読んでから使用してください。

1. 変換ケーブルとAi-NETケーブル (図10)
変換ケーブルの矢印とAi-NETケーブルの引き出し方向を合わせます。

2. Ai-NETケーブルとCHA-S609ケーブル (図11)
Ai-NETケーブルの矢印とCHA-S609ケーブルの矢印を合わせます。

3. TDA-7638J等とAi-NETケーブル (図12)
Ai-NETケーブルを上に引き出すよう接続します。

⑦CDシャトルDINコネクター
⑧Ai-NET入力コネクター
⑨Ai-NETに対応していないヘッドユニット等
⑩Ai-NET対応光デジタル製品
⑪Ai-NET対応ヘッドユニット等
⑫光ファイバーケーブル
(他製品付属または別売4915/4916)
⑬システム切りかえスイッチのポジション…1
⑭システム切りかえスイッチのポジション…2
⑮システム切りかえスイッチのポジション…3
⑯色：濃紺
⑰色：グレー
⑱CHA-S609ケーブル
⑲PINケーブル
⑳CDシャトル入力コネクター(PINタイプ)

● 車両雑音から守るために
本体を取り付けるときは、車両配線から10〜20cm離して配線してください。
バッテリー電源ケーブルとPINケーブルは、できるだけ離してください。
電源フィルター*を使う場合は、できるだけ本体から離して設置してください。
アース線をネジ止めするときは、車体の金属部分に確実に接続してください。

This unit works in either the Ai-NET system or a conventional bus system.

1. When using the unit through conventional bus system. (Fig. 6)
Conversion Cable (Dark blue) with Audio Line:
For use with all models other than 7620E/7618E/7618R/7619R. (Not for use with Ai-NET models.)
This unit works in combination with products using optical digital system.

2. When using the unit through conventional bus system. (Fig. 7)
Conversion Cable (Gray) without Audio Line:
For use with 7620E/7618E/7618R/7619R models.

3. When using the unit through Ai-NET system. (Fig. 8)
(In combination with products using optical digital system)

4. When using the unit through Ai-NET system. (Fig. 9)
(In combination with products not using optical digital system)

Cautions:
- Connect the cables by referring to the illustration. Incorrect connection may cause damage.
- Check the cables and read the attached labels carefully.

1. Ai-NET Conversion Cable and Ai-NET Cable (Fig. 10)
Match the arrow of Ai-NET conversion cables to the pulling-out direction of Ai-NET cable.

2. Ai-NET Cable and CHA-S609 Cable (Fig. 11)
Match the arrows of Ai-NET cables and CHA-S609 cable.

3. TDA-7638 etc. and Ai-NET Cable (Fig. 12)
Connect the Ai-NET cable as illustrated.

⑦CD Shuttle DIN Connector
⑧Ai-NET Input Connector
⑨Head Unit, etc. with non Ai-NET System
⑩Optical Digital Unit with Ai-NET System
⑪Head Unit, etc. with Ai-NET System
⑫Fiber Optic Cable (Included in the another factory unit or sold separately 4915/4916)
⑬System Switch Position 1
⑭System Switch Position 2
⑮System Switch Position 3
⑯Color: Dark blue
⑰Color: Gray
⑱CHA-S609 Cable
⑲RCA Cable
⑳CD Shuttle Input Connector (PIN type)

To prevent external noise from entering the audio system.
- ● Locate the unit and route the leads at least 10 cm away from the car harness.
- ● Keep the battery power leads as far away from other leads as possible.
- ● Connect the ground lead securely to a bare metal spot (remove the coating if necessary) of the car chassis.
- ● If you add an optional noise suppressor, connect it as far away from the unit as possible. Your Alpine dealer carries various Alpine noise suppressors, contact them for further information.
- ● Your Alpine dealer knows best about noise prevention measures so consult your dealer for further information.

Description of IC Terminal

45552W31 (IC501)

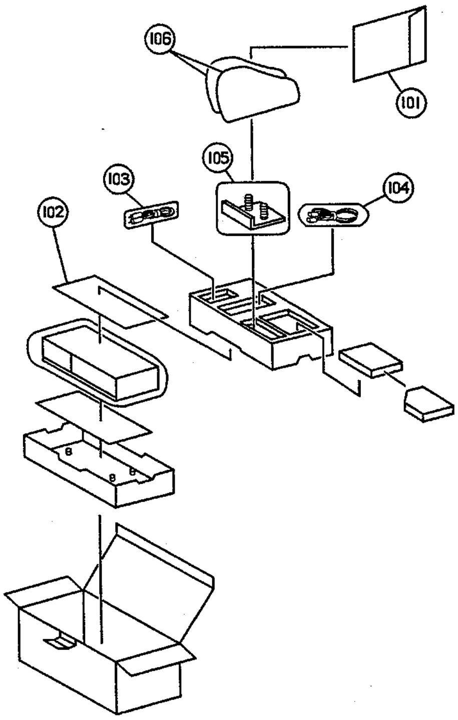
No.	Symbol	I / O	Terminal Description
1	SCL	O	Data read clock output signal line.
2	SDA	I / O	Data reading and writing, Data input and output signal line.
3~8	NC	—	N.C.
9	GND	—	GND
10	EJT-LED	O	Lighting output signal terminal. (at PLAY, at PAUSE and at EJECT)
11	NC	—	N.C.
12	A-MUTE	O	Audio mute output signal terminal.
13	LOD M+	O	Output to move loading motor to direction for pulling in a disc.
14	LOD M-	O	Output to move loading motor to returning a disc to magazine.
15	ELV M+	O	Output signal to move up elevator.
16	ELV M-	O	Output signal to move down elevator.
17	V-CONT	O	Power supply and main power supply ON / OFF output terminal.
18	F-CONT	O	Focus gain control output.
19	$\overline{\text{LS-RST}}$	O	LSI reset output signal.
20	$\overline{\text{LOAD-SW}}$	I	Loading arm operation check switch input signal.
21	$\overline{\text{HOME}}$	I	Elevator home position detection switch input signal.
22	MAG -SW	I	Magazine detection switch input terminal.
23	GND	—	GND
24	GND	—	GND
25	$\overline{\text{LMT-SW}}$	I	Sled motor inner circle limit switch input terminal.
26	LOCK	I	TC9236AF (IC101) lock signal input.
27	BUS 0	I / O	Command and data communication bus line.
28	BUS 1		
29	BUS 2		
30	BUS 3		
31	BUCK	O	TC9236AF (IC101) data communication clock output terminal.
32	$\overline{\text{CCE}}$	O	TC9236AF (IC101) chip enable signal output terminal.
33	BUS-OUT	O	BUS data output.
34	BUS-DET	I	BUS communication detection terminal.
35	RESET	I	Reset signal input terminal.
36	BUS-IN	I	Bus data input.
37	BATT	I	Battery detect.
38	ACC	I	ACC ON / OFF input signal.
39	EJT-KEY	I	MAGAZINE EJECT key input signal.
40	V_{DD}	—	Regulator +5V Terminal.
41	X2	—	Ceramic lock connection terminal for system clock 1. (4.19MHz)
42	X1	—	Ceramic lock connection terminal for system clock 1. (4.19MHz)
43	GND	—	GND
44	NC	—	N.C.
45	GND	—	GND
46	AV_{SS}	—	GND
47	HI-TEMP	I	High temperature detect. (Sensor)
48	LO-TEMP	I	Low temperature detect. (Sensor)
49	DISC-P	I	Disc in detect sensor.
50	LOAD-P	I	Loading end detect sensor.
51	DISC-OK	I	Unloading end detect sensor.
52	$\overline{\text{DISC-NO}}$	I	Disc number detect photo sensor.
53	BUS-SW	I	Bus / Ai-NET switching.
54	GND	—	GND
55	AV_{DD}	—	Power supply terminal.

No.	Symbol	I / O	Terminal Description
56	AV_{REF}	—	Reference voltage input for D / A converter.
57	NC	—	N.C.
58	J-RESET	O	Reset output terminal.
59	NC	—	N.C.
60	J-RS	O	Register choice output terminal.
61	J-R/W	O	Register load output terminal.
62	J-SOUT	O	Serial data output terminal.
63	J-SIN	I	Serial data input terminal.
64	J-SCLK	O	Serial correspondence clock output terminal.

Packing Assembly Parts List

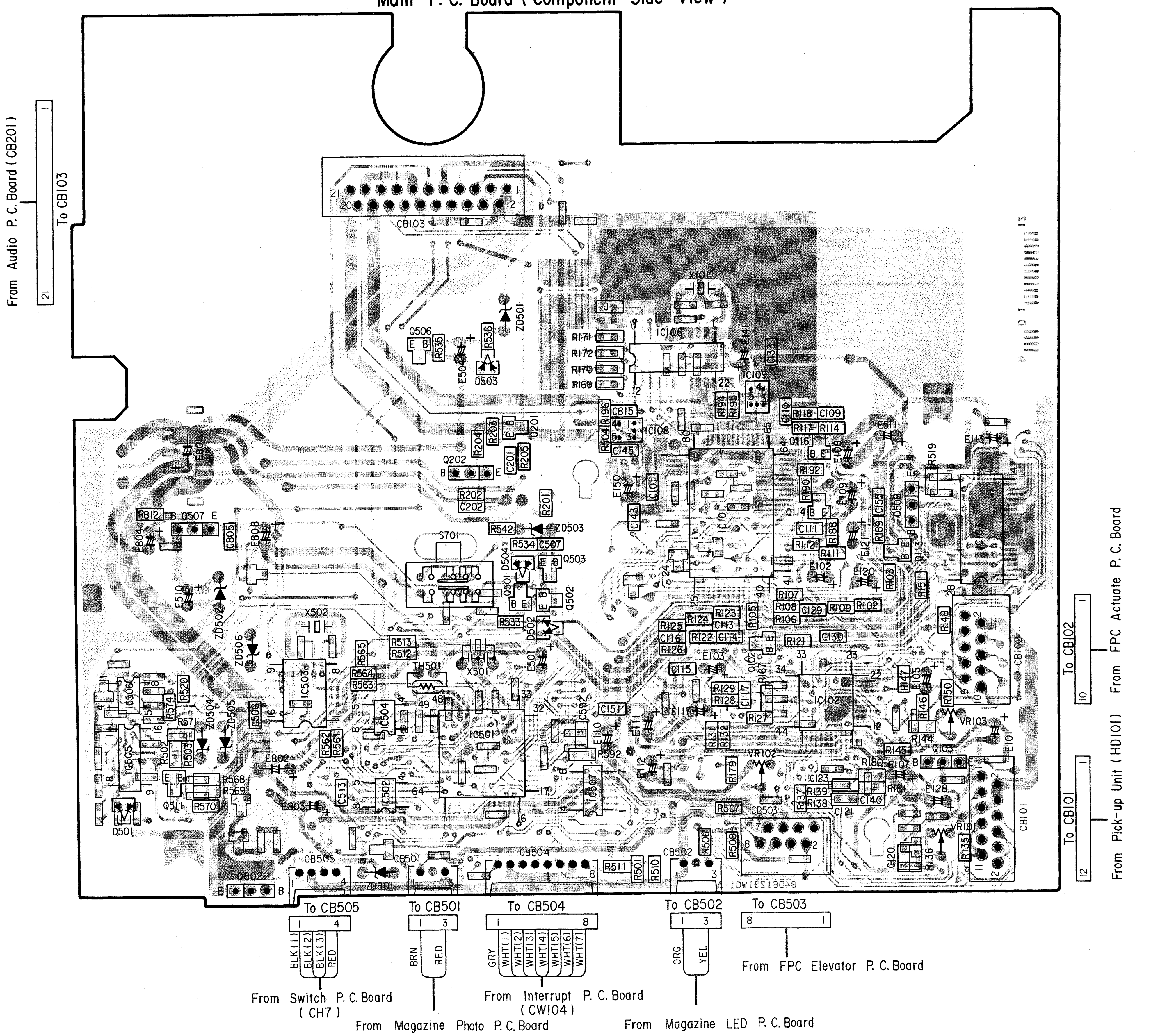
Symbol No.	Part No.	Description	Symbol No.	Part No.	Description
101-1	03D40121T46	Bolt, Hex. W/Double Washer (M4×6)			
101-2	02B47353F06	Nut, Hex. Flange (M6)			
101-3	03B90962F03	Bolt, Hex. Flange (M6×50)			
101-4	02A44071U02	Nut, Wing (M6)			
101-5	04S40071G22	Washer, Spring Lock (M6.1)			
101-6	03S63857F05	Screw, Tapping (M5×15)			
102	68P61329W02	Owner's Manual			
103	01T75058W01	Assy., RCA Connector			
104	01T75057W01	Assy., DIN Connector			
105	01B50968W02	Assy., Bracket			
106	07B31413W02	Bracket, Side			

Packing Method View

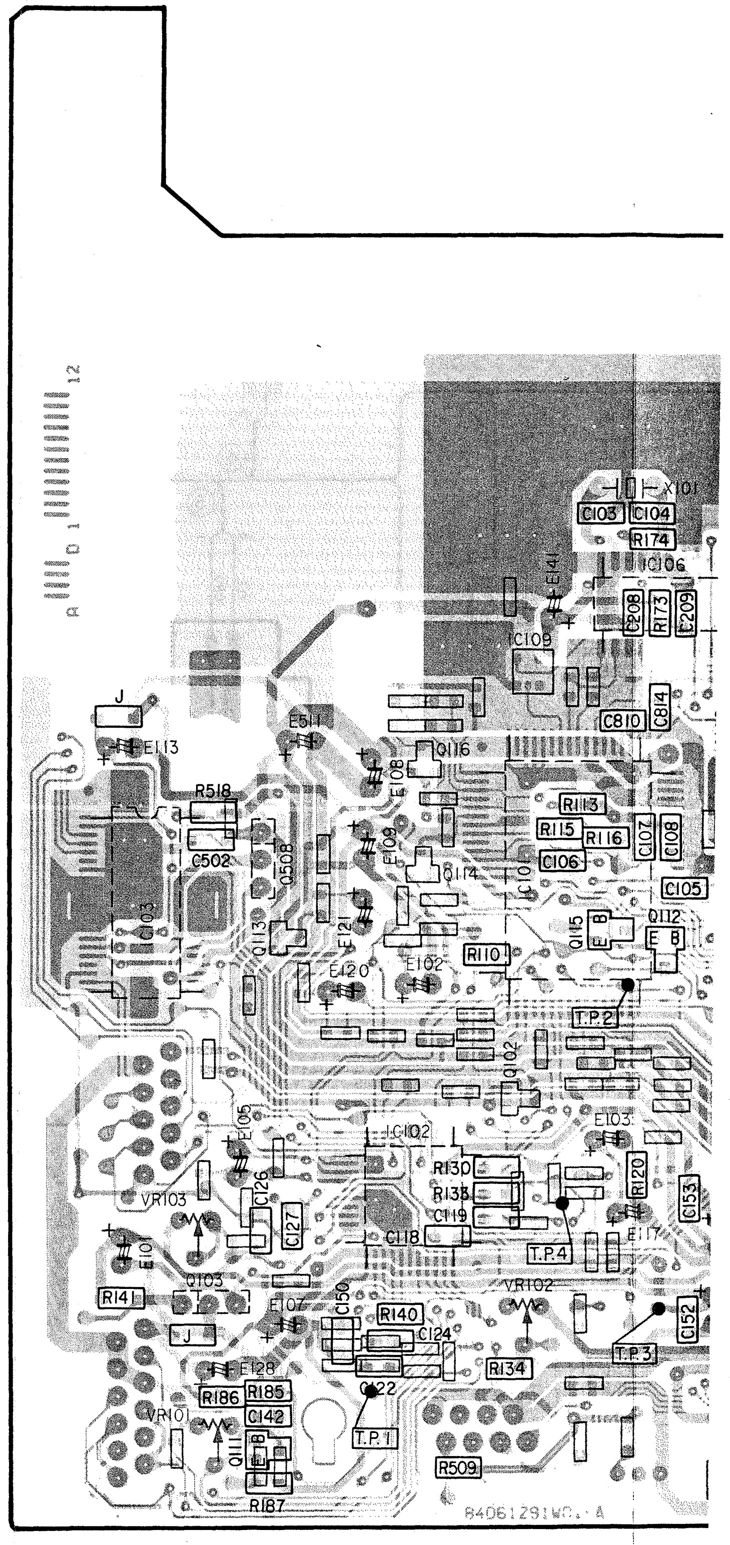


Parts Layout on P.C. Boards and Wiring Diagram (1/2)

Main P. C. Board (Component Side View)


From Audio P. C. Board (CB201)
To CB103
21
1
CB103
20
2
X101
IC106
IC109
IC108
IC101
IC102
IC103
IC501
IC502
IC503
IC504
IC505
IC506
IC507
S701
X501
X502
TH501
VR101
VR102
VR103
CB101
CB102
CB503
CB505
CB501
CB504
CB502
To CB102
From FPC Actuate P. C. Board
To CB101
From Pick-up Unit (HD101)
To CB505
BLK(1)
BLK(2)
BLK(3)
RED
From Switch P. C. Board
(CH7)
To CB501
BRN
RED
From Magazine Photo P. C. Board
To CB504
GRY
WHT(1)
WHT(2)
WHT(3)
WHT(4)
WHT(5)
WHT(6)
WHT(7)
From Interrupt P. C. Board
(CW104)
To CB502
ORG
YEL
From Magazine LED P. C. Board
To CB503
From FPC Elevator P. C. Board

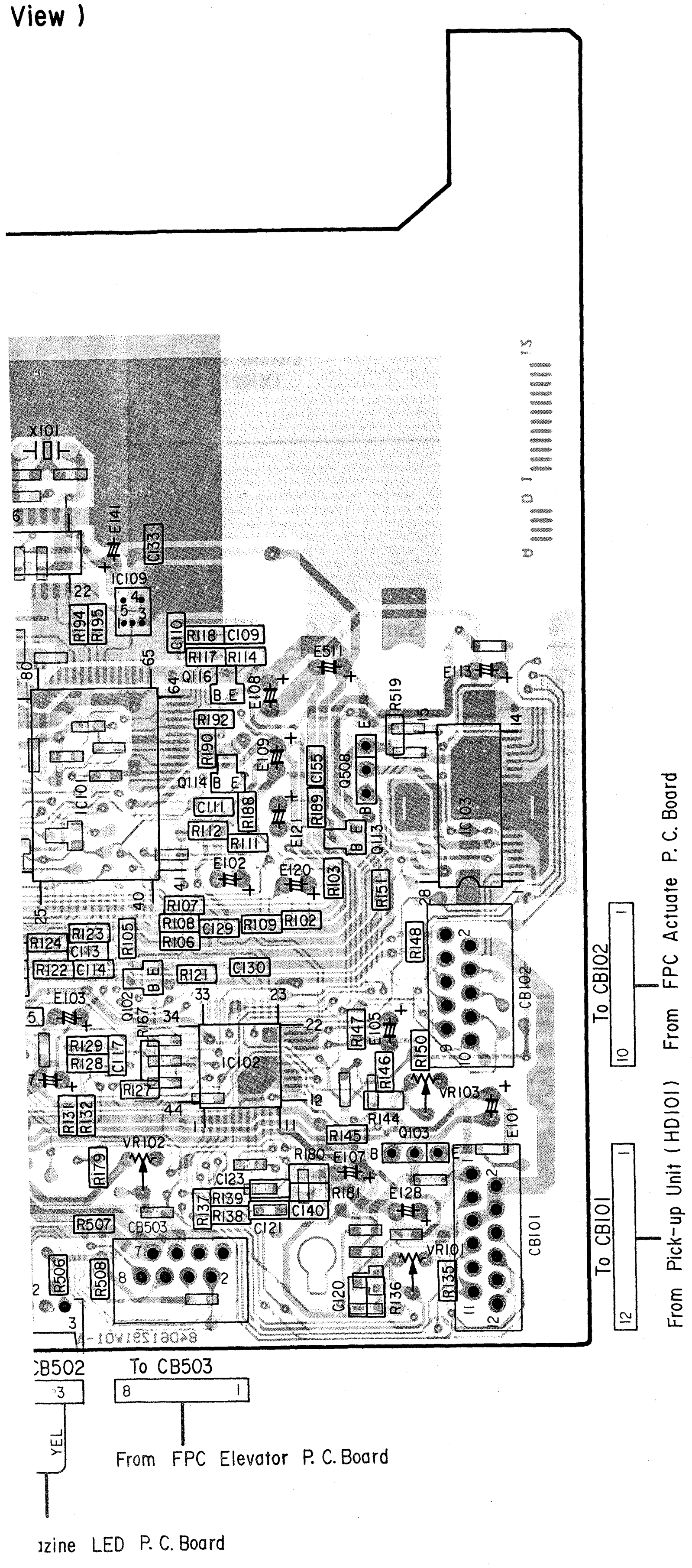
Main F


X101
IC106
IC108
IC102
IC103
VR101
VR102
VR103
T.P.1
T.P.2
T.P.3
T.P.4

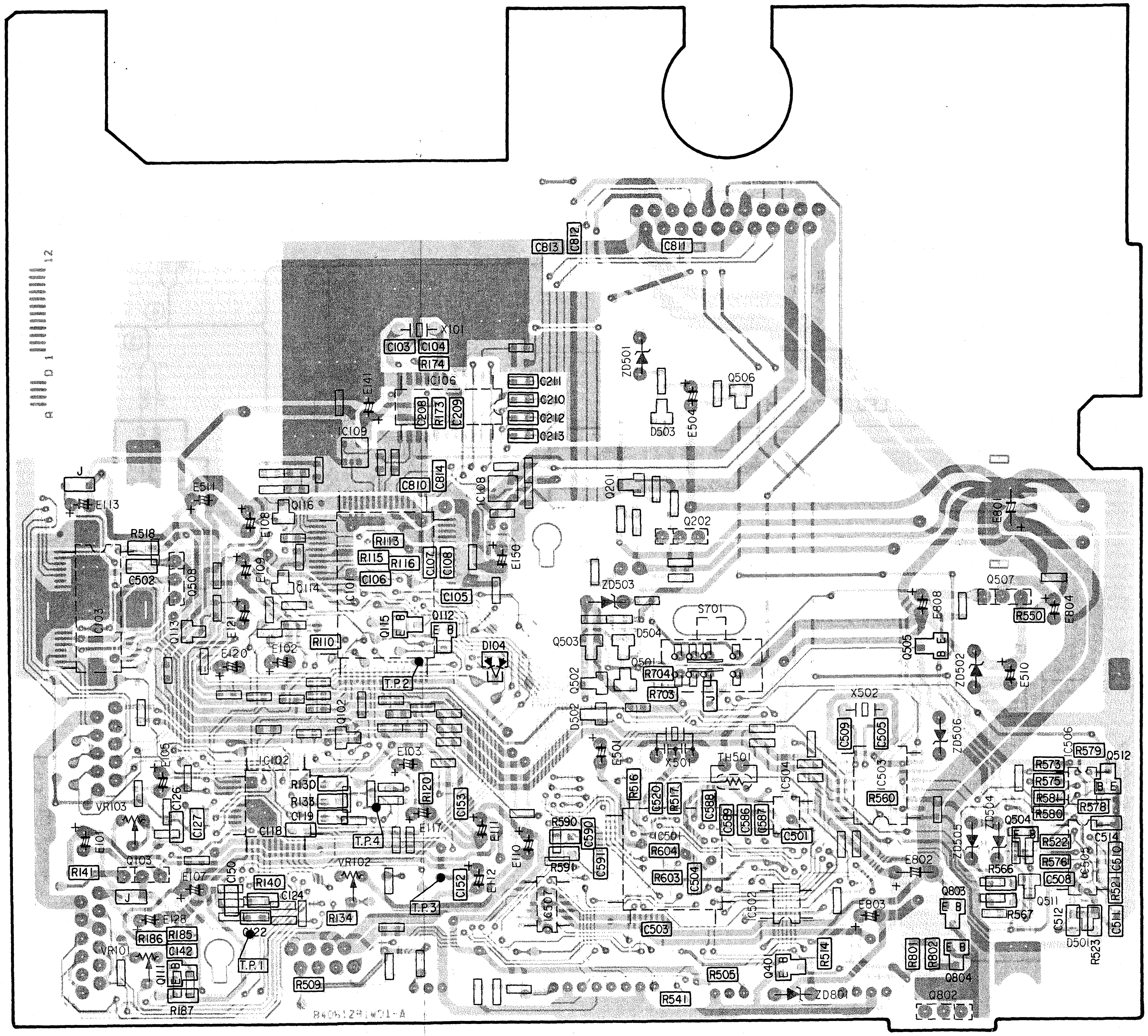
1
2
3
4
5
A
B
C
D
E
F
G
H

m (1/2)

View)


X101
E141
C133
IC109
R194
R195
C110
R118
C109
R117
R114
Q116
E108
E511
R519
E113
R192
R190
E109
C155
Q508
IC103
Q114
C111
R188
R112
R111
E121
R189
Q113
R103
E102
E120
R151
R107
R108
R106
C129
R109
R102
R148
CB102
R124
C113
R123
R105
R122
C114
R121
C130
E103
Q102
R167
R129
R128
C117
IC102
R147
E105
R150
R146
VR103
R127
R144
R131
R132
R145
Q103
E101
VR102
R180
E107
R179
C123
R181
E128
R137
R139
R138
C140
VR101
C121
R507
CB503
R136
R135
CB101
R506
R508
C120
To CB102
From FPC Actuate P. C. Board
To CB101
From Pick-up Unit (HD101)
CB502
To CB503
YEL
From FPC Elevator P. C. Board
zine LED P. C. Board

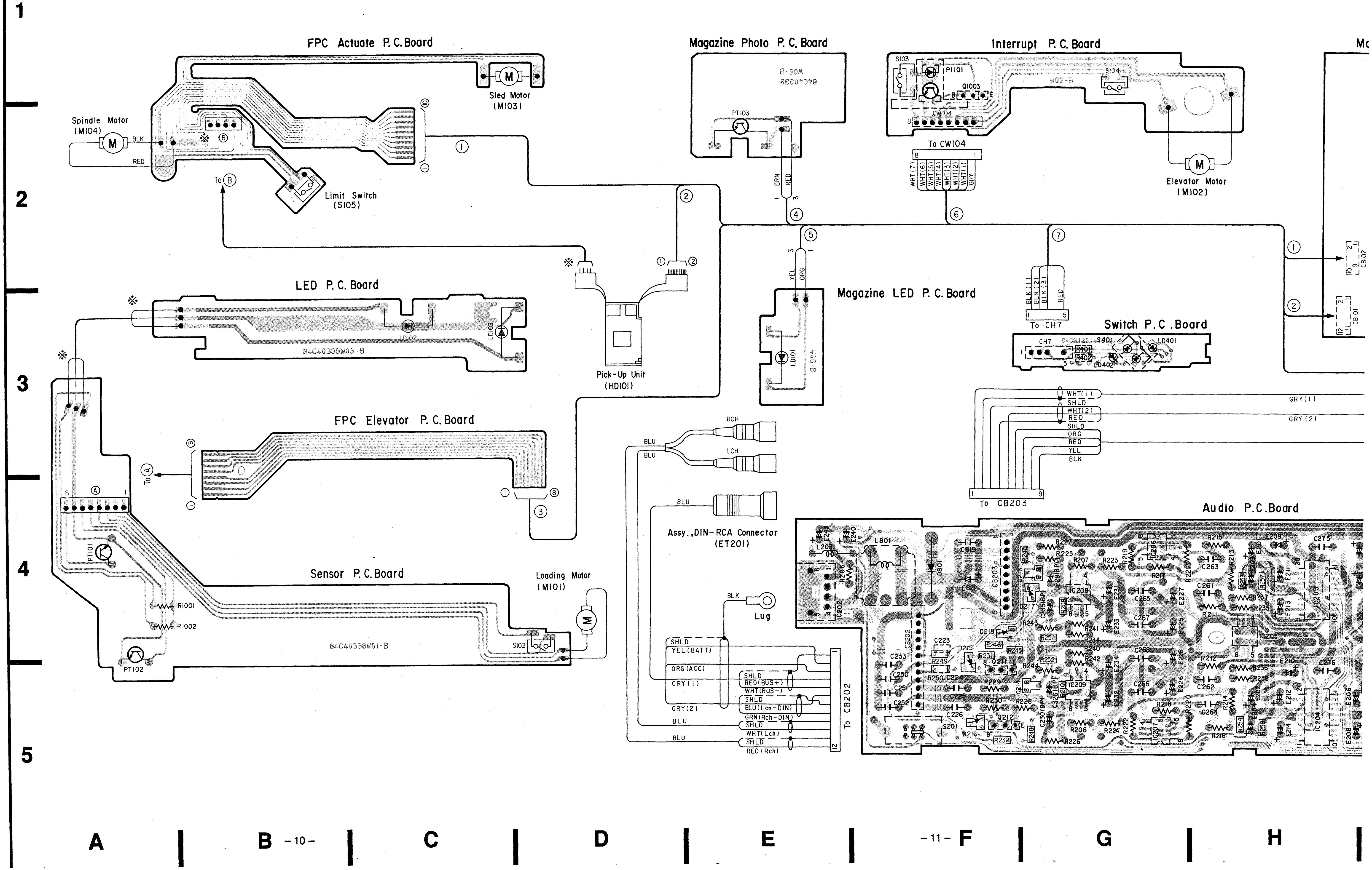
Main P. C. Board (Foil Side View)


CB813
CB812
C811
X101
C103
C104
R174
IC106
E141
C211
C210
C212
C213
R208
R173
C209
ZD501
Q506
D503
E504
IC109
C810
C814
IC108
Q201
Q202
J
E113
E511
Q116
R518
E108
R113
R115
R116
C107
C108
E150
C502
Q508
E109
C106
C105
Q507
Q114
Q112
ZD503
S701
E808
R550
E804
IC103
Q113
E121
R110
Q115
D104
Q503
D504
Q501
Q505
ZD502
E510
E120
E102
T.P.2
R704
R703
Q502
X502
Q102
D502
C509
C505
ZD506
C506
E105
E103
R579
Q512
IC102
R130
R133
C119
TH501
R573
R575
VR103
X501
IC504
C503
R581
R580
R578
C126
C127
C501
R120
R516
C520
R517
C588
C589
C586
C587
R560
ZD504
Q504
E101
C118
E117
C153
E111
E110
R590
C590
C591
R604
R522
C514
C510
ZD505
Q103
T.P.4
R591
R603
E802
R566
R576
C508
R141
E107
C150
VR102
R140
C152
E112
C504
Q803
E803
Q511
R521
C124
T.P.3
IC501
C502
C512
R567
C511
R186
R185
C142
Q122
R134
C503
D501
R523
VR101
T.P.1
R514
R801
R802
Q111
R509
Q401
R505
Q804
R541
ZD801
R187
Q802

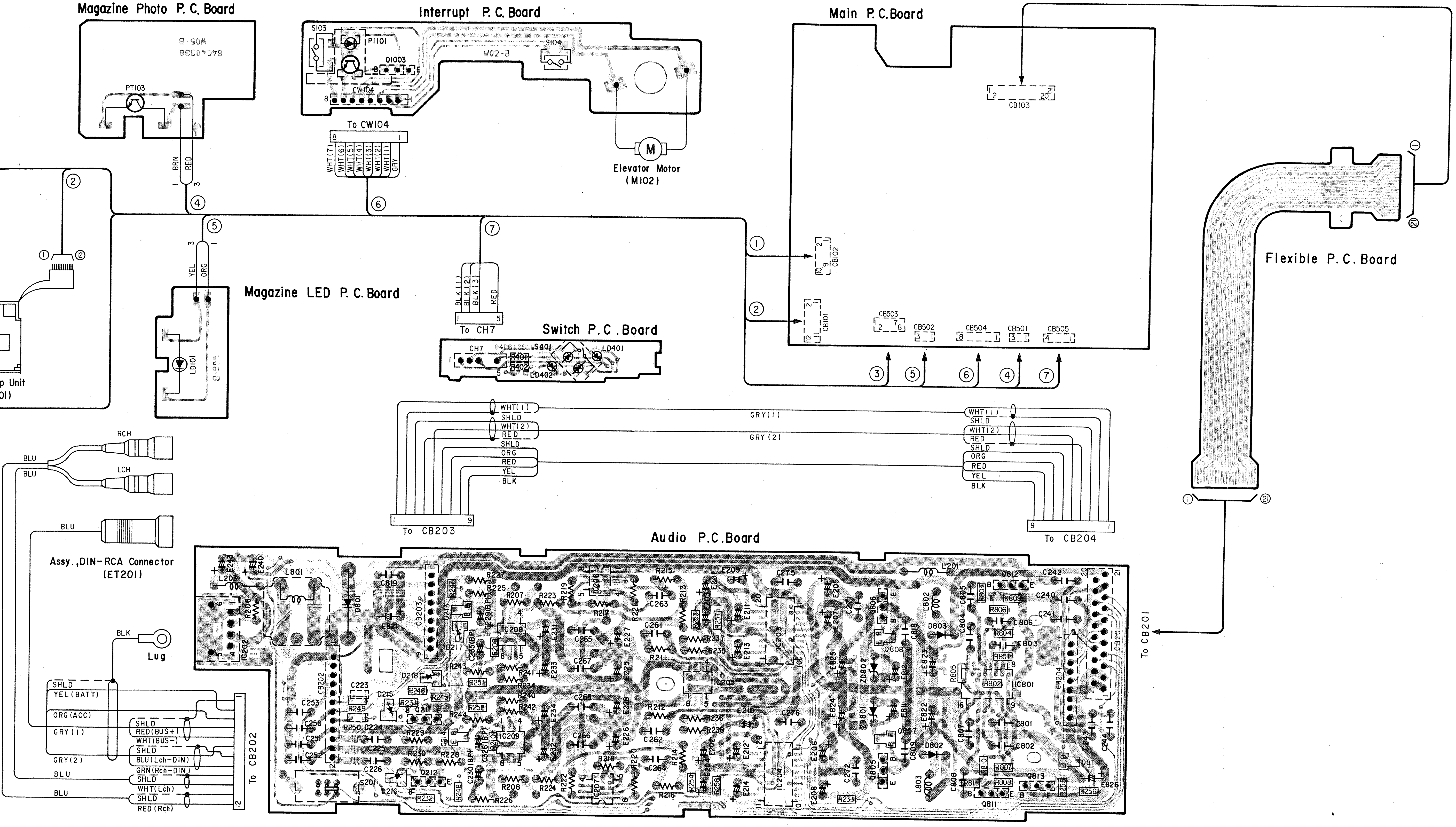
Orange Color Pattern : Component Side Pattern
Blue Color Pattern : Foil Side Pattern

Parts Layout on P.C. Boards and Wiring Diagram (2/2)

All P.C. Boards viewed from soldered side.

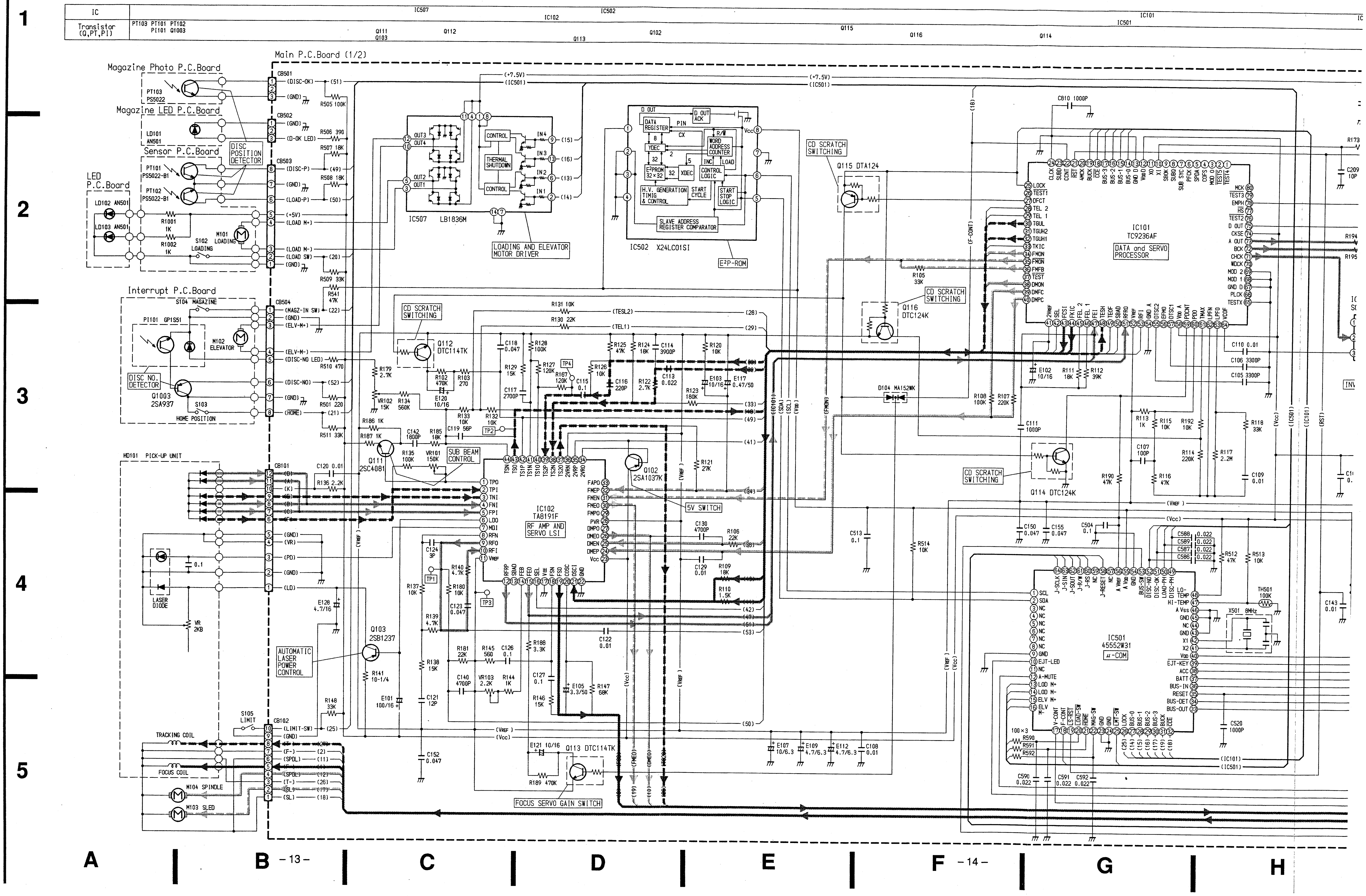

1
2
3
4
5
FPC Actuate P.C.Board
Sled Motor (M103)
Spindle Motor (M104)
BLK
RED
Limit Switch (S105)
To Ⓑ
Ⓑ
※
①
⑩
Magazine Photo P.C.Board
84C40338 W05-B
PT103
BRN
RED
1
3
④
Interrupt P.C.Board
S103
PI101
Q1003
S104
W02-B
CW104
To CW104
8
1
WHT(7)
WHT(6)
WHT(5)
WHT(4)
WHT(3)
WHT(2)
WHT(1)
GRY
⑥
Elevator Motor (M102)
Mo
②
⑤
YEL
ORG
⑦
BLK(1)
BLK(2)
BLK(3)
RED
To CH7
Switch P.C.Board
CH7
S401
LD401
R401
R402
LD402
Magazine LED P.C.Board
LD101
W06-B
CB102
CB101
LED P.C.Board
LD102
LD103
84C40338W03-B
Pick-Up Unit (HD101)
⑫
FPC Elevator P.C.Board
⑧
To Ⓐ
③
Ⓐ
PT101
R1001
R1002
PT102
Sensor P.C.Board
84C40338W01-B
S102
Loading Motor (M101)
RCH
LCH
BLU
Assy.,DIN-RCA Connector (ET201)
BLK
Lug
SHLD
YEL(BATT)
ORG(ACC)
GRY(1)
GRY(2)
RED(BUS+)
WHT(BUS-)
BLU(Lch-DIN)
GRN(Rch-DIN)
WHT(Lch)
RED(Rch)
To CB202
12
WHT(1)
WHT(2)
ORG
YEL
GRY(1)
GRY(2)
To CB203
9
Audio P.C.Board
L801
D801
L203
IC202
CB203
CB202
IC208
IC209
IC205
IC206
IC207
IC203
IC204
S201
Q211
Q212
Q213
D215
D216
D217
D218
R206
R207
R208
R209
R210
R211
R212
R213
R214
R215
R216
R217
R218
R219
R220
R221
R222
R223
R224
R225
R226
R227
R228
R229
R230
R231
R232
R233
R234
R235
R236
R237
R238
R239
R240
R241
R242
R243
R244
R245
R246
R247
R248
R249
R250
R251
R252
R253
R254
C223
C224
C225
C226
C250
C251
C252
C253
C261
C262
C263
C264
C265
C266
C267
C268
C275
C276
E201
E202
E203
E204
E206
E208
E209
E210
E212
E213
E214
E225
E226
E227
E228
E231
E232
E233
E234
E240
E243
E821
C819
A
B
C
D
E
F
G
H

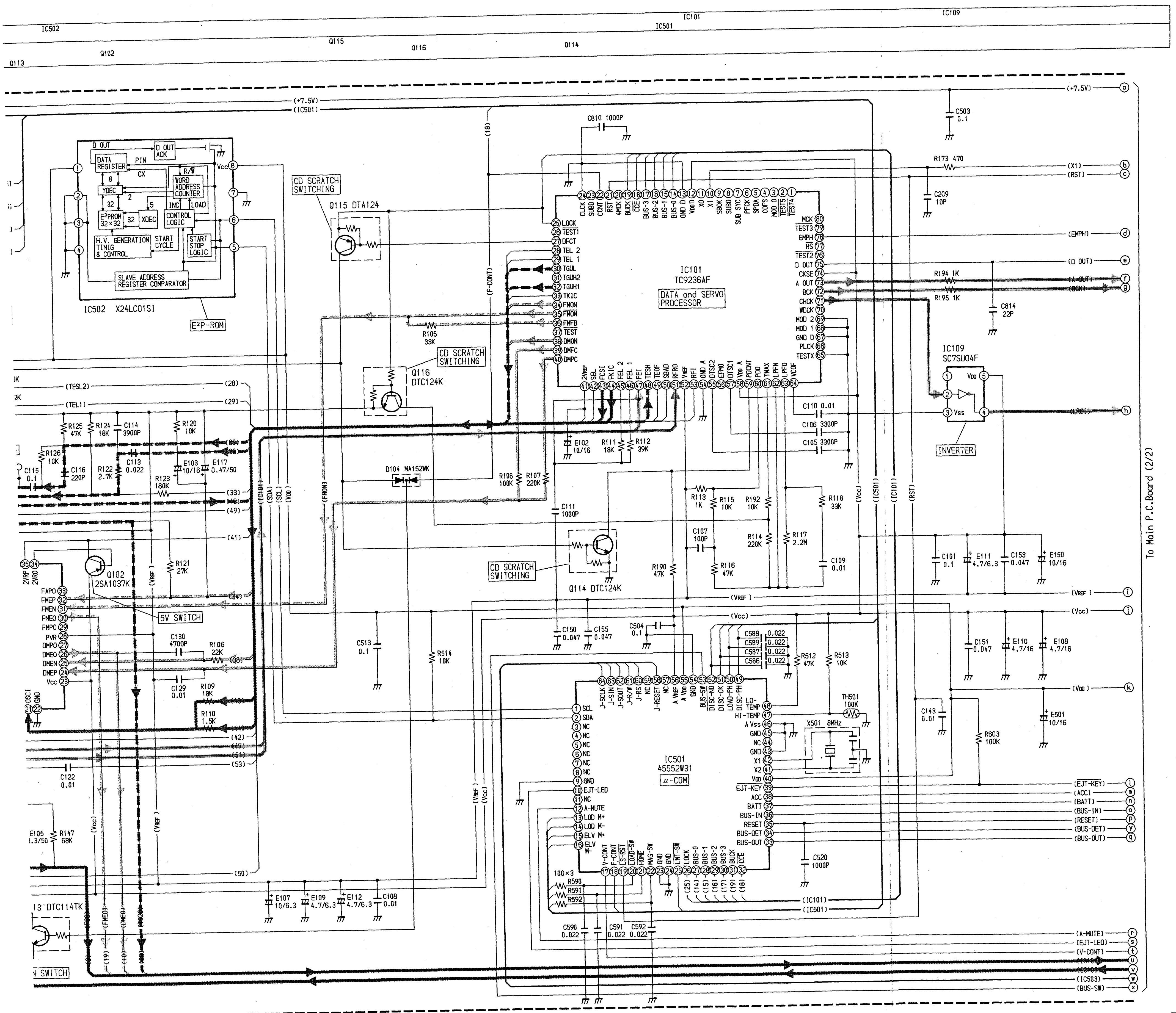
(2/2) All P.C. Boards viewed from soldered side.


Magazine Photo P. C. Board
PT103
Interrupt P. C. Board
S103
P1101
Q1003
S104
W02-B
CW104
To CW104
WHT(7)
WHT(6)
WHT(5)
WHT(4)
WHT(3)
WHT(2)
WHT(1)
GRY
BRN
RED
Elevator Motor
(M102)
Main P. C. Board
CB103
CB102
CB101
CB503
CB502
CB504
CB501
CB505
Flexible P. C. Board
Magazine LED P. C. Board
YEL
ORG
LD101
BLK(1)
BLK(2)
BLK(3)
RED
To CH7
Switch P. C. Board
CH7
S401
LD401
LD402
R401
R402
p Unit
01)
WHT(1)
SHLD
WHT(2)
RED
SHLD
ORG
RED
YEL
BLK
GRY(1)
GRY(2)
To CB203
To CB204
RCH
LCH
BLU
Assy.,DIN-RCA Connector
(ET201)
BLK
Lug
SHLD
YEL(BATT)
ORG(ACC)
GRY(1)
GRY(2)
SHLD
RED(BUS+)
WHT(BUS-)
SHLD
BLU(Lch-DIN)
GRN(Rch-DIN)
SHLD
WHT(Lch)
SHLD
RED(Rch)
To CB202
Audio P.C. Board
To CB201
IC201
IC202
IC203
IC204
IC205
IC206
IC207
IC208
IC209
IC801
L201
L203
L801
L802
L803
CB202
CB203
CB204
CB201
S201

Orange Color Pattern : Component Side Pattern
Blue Color Pattern : Foil Side Pattern

Schematic Diagram (1/3)


IC
Transistor (Q,PT,PI)
PT103 PT101 PT102 PI101 Q1003
IC507
IC102
IC502
IC101
IC501
Q111 Q103
Q112
Q113
Q102
Q115
Q116
Q114
1
2
3
4
5
Main P.C.Board (1/2)
Magazine Photo P.C.Board
PT103 PS5022
Magazine LED P.C.Board
LD101 AN501
Sensor P.C.Board
PT101 PS5022-B1
PT102 PS5022-B1
DISC POSITION DETECTOR
LED P.C.Board
LD102 AN501
LD103 AN501
R1001 1K
R1002 1K
S102 LOADING
M101 LOADING
CB501
CB502
CB503
CB504
(DISC-OK)
(D-OK LED)
(DISC-P)
(LOAD-P)
(+5V)
(LOAD M+)
(LOAD M-)
(LOAD SW)
(GND)
Interrupt P.C.Board
S104 MAGAZINE
PI101 GP1S51
M102 ELEVATOR
DISC NO. DETECTOR
Q1003 2SA937
S103 HOME POSITION
(MAGZ-IN SW)
(ELV-M+)
(ELV-M-)
(DISC-NO LED)
(DISC-NO)
(HOME)
HD101 PICK-UP UNIT
CB101
LASER DIODE
VR 2KB
S105 LIMIT
CB102
TRACKING COIL
FOCUS COIL
M104 SPINDLE
M103 SLED
(LIMIT-SW)
IC507 LB1836M
LOADING AND ELEVATOR MOTOR DRIVER
CONTROL
THERMAL SHUTDOWN
IC502 X24LC01SI
E²P-ROM
DATA REGISTER
YDEC
XDEC
WORD ADDRESS COUNTER
CONTROL LOGIC
H.V. GENERATION TIMIG & CONTROL
START CYCLE
START STOP LOGIC
SLAVE ADDRESS REGISTER COMPARATOR
CD SCRATCH SWITCHING
Q115 DTA124
Q116 DTC124K
Q112 DTC114TK
Q111 2SC4081
SUB BEAM CONTROL
Q102 2SA1037K
5V SWITCH
IC102 TA8191F
RF AMP AND SERVO LSI
Q103 2SB1237
AUTOMATIC LASER POWER CONTROL
Q113 DTC114TK
FOCUS SERVO GAIN SWITCH
D104 MA152WK
IC101 TC9236AF
DATA and SERVO PROCESSOR
Q114 DTC124K
IC501 45552W31
μ-COM
X501 8MHz
TH501 100K
C810 1000P
(+7.5V)
(IC501)
(VREF)
(Vcc)
A
B
C
D
E
F
G
H


IC502 X24LC01SI
E²P-ROM
CD SCRATCH SWITCHING
Q115 DTA124
Q116 DTC124K
Q114 DTC124K
IC101 TC9236AF
DATA and SERVO PROCESSOR
IC109 SC7SU04F
INVERTER
IC501 45552W31
μ-COM
Q102 2SA1037K
5V SWITCH
D104 MA152WK
X501 8MHz
TH501 100K
To Main P.C.Board (2/2)
D
E
F
G
H
I
J
K

NOTES:
1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. P = $\frac{1}{1,000,000}$

IC101

1	—	21	5.06V	41	4.4V	61	2.23V
2	—	22	0.05V	42	5.09V	62	2.23V
3	—	23	—	43	2.6V	63	2V
4	—	24	0.08V	44	2.6V	64	2.1V
5	—	25	5.09V	45	2.22V	65	0.08V
6	—	26	5.1V	46	2.22V	66	—
7	—	27	PS	47	2.23V	67	0.08V
8	—	28	2.22V	48	2.23V	68	0.08V
9	—	29	2.22V	49	2.23V	69	0.08V
10	PS	30	2.23V	50	2.43V	70	—
11	—	31	—	51	2.49V	71	PS
12	5.13V	32	2.22V	52	2.23V	72	PS
13	0.08V	33	2.18V	53	PS	73	PS
14	PS	34	2.21V	54	0V	74	5.13V
15	PS	35	2.22V	55	2.6V	75	PS
16	PS	36	2.22V	56	—	76	—
17	PS	37	—	57	2.6V	7	—
18	PS	38	2.22V	58	5.13V	78	5V / 0V
19	PS	39	PS	59	5.1V	79	—
20	—	40	PS	60	PS	80	—

IC102

1	1.9V	12	2.53V	23	5.12V	34	4.55V
2	2.2V	13	2.74V	24	2.29V	35	4.36V
3	2.2V	14	2.22V	25	2.29V	36	2.22V
4	2.2V	15	2.22V	26	PS	37	2.18V
5	2.2V	16	5.1V	27	—	38	2.21V
6	4.13V	17	0.08V	28	2.23V	39	2.21V
7	0.27V	18	2.22V	29	—	40	2.2V
8	2.22V	19	2.17V	30	2.18V	41	2.21V
9	PS	20	2.13V	31	2.22V	42	2.22V
10	PS	21	2.6V	32	2.22V	43	2.22V
11	2.22V	22	0.08V	33	—	44	2.22V

IC501

1	PS	17	5V / 0V	33	5V / 0V	49	5V / 0.2V	
2	PS	18	5V / 0V	34	5V / 0V	50	5V / 0.2V	
3	—	19	5V / 0V	35	5.07V	51	5V / 0.2V	
4	—	20	5V / 0V	36	5V / 0.5V	52	5V / 0.9V	
5	—	21	5V / 0V	37	5.07V	53	2.6V / 0V	Ai-NET/Min BUS
6	—	22	5V / 0V	38	5.06V	54	0.05V	
7	—	23	0.05V	39	5V / 0V	55	5.07V	
8	—	24	0.05V	40	5.06V	56	5.13V	
9	0.05V	25	5V / 0V	41	PS	57	—	
10	5V / 0V	26	5V / 0V	42	PS	58	5.07V	
11	—	27	PS	43	0.08V	59	—	
12	5V / 0V	28	PS	44	—	60	5V / 0V	
13	5V / 0V	29	PS	45	0.08V	61	5V / 0V	
14	5V / 0V	30	PS	46	0.08V	62	5V / 0V	
15	5V / 0V	31	PS	47	4.43V	63	5V / 0V	
16	5V / 0V	32	PS	48	5.1V	64	5V / 0V	

IC109

1	0V
2	PS
3	0.08V
4	PS
5	5.12V

IC502

1	5.07V
2	0.05V
3	0.05V
4	0.05V
5	PS
6	PS
7	0.05V
8	5.07V

IC507

1	8V
2	5V / 0V
3	8V / 0V
4	8V
5	8V / 0V
6	5V / 0V
7	0.05V
8	—
9	5V / 0V
10	8V / 0V
11	8V
12	8V / 0V
13	5V / 0V
14	0.05V

	E	C	B
Q102	5.03V	4.2V	4.44V
Q103	4.5V	1.8V	3.95V
Q111	1.2V	1.2V	1.5V
Q112	2.1V	2.05V	PS
Q113	2.1V	2.05V	PS
Q114	0V	PS	PS
Q115	PS	0V	PS
Q116	2.09V	2.1V	PS
Q1003	PS	0V	0.2V

<Measuring Conditions>

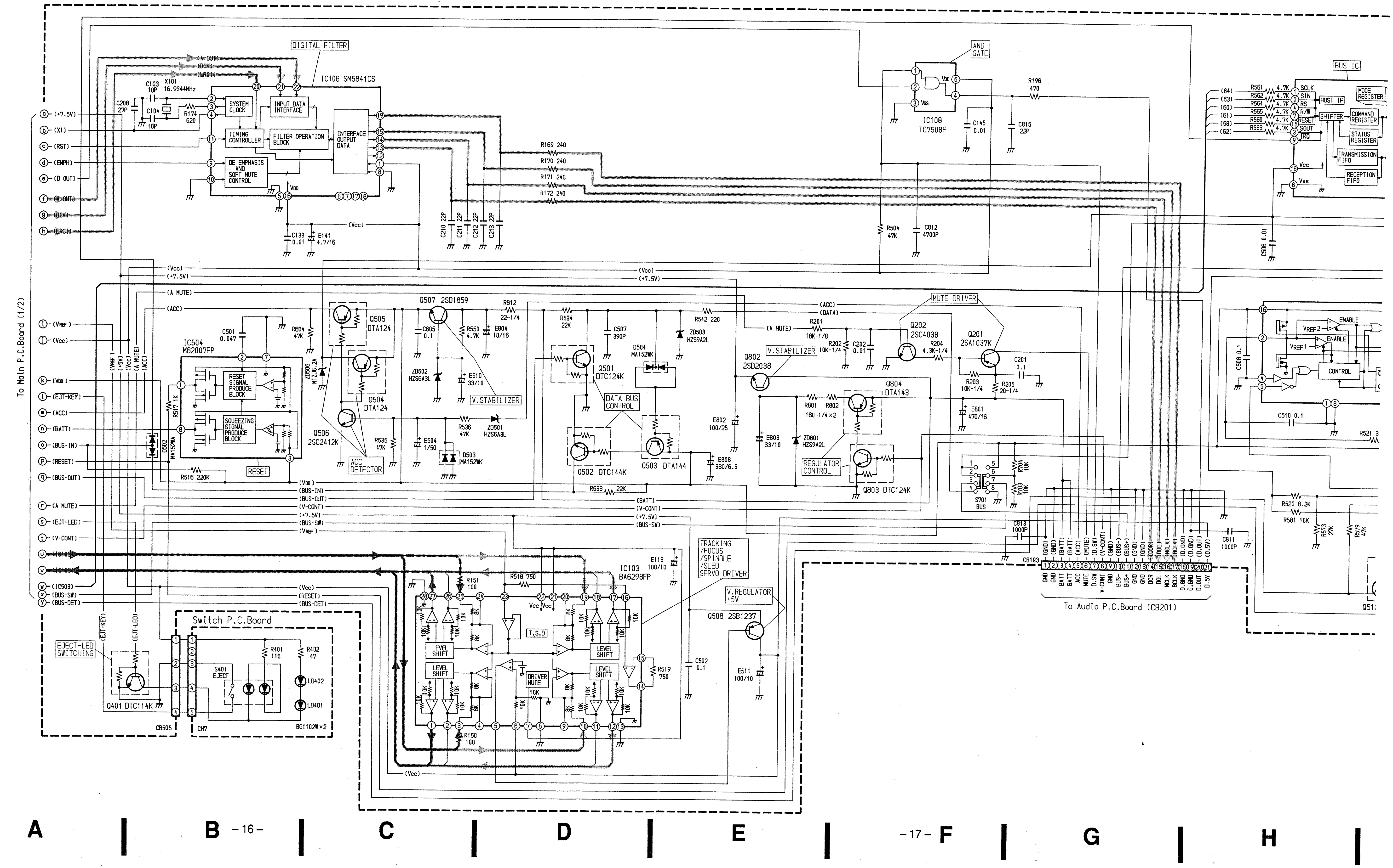
1. Power Supply Voltage : DC14V
2. Measuring Meter : Digital Multi Voltmeter
3. Measuring Point Reference : Between Ground
4. Measuring Condition : Test Disc Play
(A-BEX TCD-782 Track No. 2.1kHz)

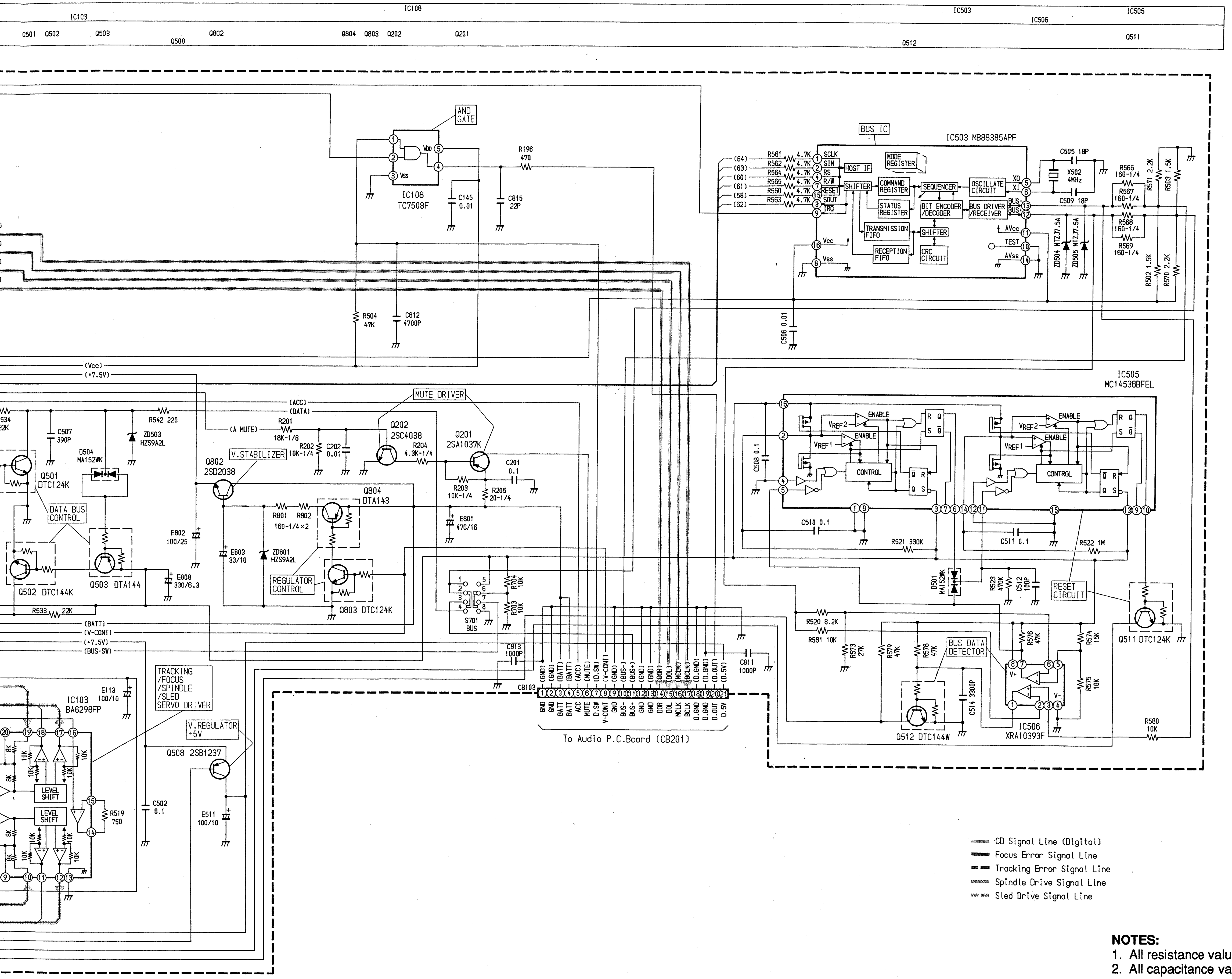
▨ CD Signal Line (Digital)
▬ Focus Error Signal Line
╍ Tracking Error Signal Line
▨ Spindle Drive Signal Line
╍ Sled Drive Signal Line

Schematic Diagram (2/3)

IC: IC504 IC106 IC103 IC108

Transistor (Q): Q401 Q505 Q506 Q504 Q507 Q501 Q502 Q503 Q508 Q802 Q804 Q803 Q202 Q201 Q512


Main P.C.Board (2/2)
DIGITAL FILTER
IC106 SM5841CS
X101 16.9344MHz
SYSTEM CLOCK
INPUT DATA INTERFACE
TIMING CONTROLLER
FILTER OPERATION BLOCK
INTERFACE OUTPUT DATA
DE EMPHASIS AND SOFT MUTE CONTROL
AND GATE
IC108 TC7508F
BUS IC
HOST IF
SHIFTER
MODE REGISTER
COMMAND REGISTER
STATUS REGISTER
TRANSMISSION FIFO
RECEPTION FIFO
To Main P.C.Board (1/2)
IC504 M62007FP
RESET SIGNAL PRODUCE BLOCK
SQUEEZING SIGNAL PRODUCE BLOCK
RESET
Q505 DTA124
Q504 DTA124
Q506 2SC2412K
ACC DETECTOR
Q507 2SD1859
V.STABILIZER
Q501 DTC124K
DATA BUS CONTROL
Q502 DTC144K
Q503 DTA144
D504 MA152WK
Q802 2SD2038
V.STABILIZER
MUTE DRIVER
Q202 2SC4038
Q201 2SA1037K
Q804 DTA143
Q803 DTC124K
REGULATOR CONTROL
S701 BUS
CONTROL
ENABLE
TRACKING /FOCUS /SPINDLE /SLED SERVO DRIVER
IC103 BA6298FP
LEVEL SHIFT
T.S.D
DRIVER MUTE
V.REGULATOR +5V
Q508 2SB1237
EJECT-LED SWITCHING
Q401 DTC114K
CB505
Switch P.C.Board
S401 EJECT
LD402
LD401
BG1102W×2
CH7
CB103
To Audio P.C.Board (CB201)
A
B
C
D
E
F
G
H
1
2
3
4
5


IC103
IC108
IC503
IC506
IC505
Q501 Q502 Q503 Q508 Q802 Q804 Q803 Q202 Q201 Q512 Q511
AND GATE
IC108 TC7508F
C145 0.01
C815 22P
R196 470
BUS IC
IC503 MB88385APF
SCLK
SIN
RS
R/W
RESET
SOUT
IRQ
HOST IF
MODE REGISTER
SHIFTER
COMMAND REGISTER
SEQUENCER
OSCILLATE CIRCUIT
STATUS REGISTER
BIT ENCODER /DECODER
BUS DRIVER /RECEIVER
TRANSMISSION FIFO
SHIFTER
RECEPTION FIFO
CRC CIRCUIT
Vcc
Vss
AVcc
TEST
AVss
XO
XI
C505 18P
X502 4MHz
C509 18P
R566 160-1/4
R567 160-1/4
R568 160-1/4
R569 160-1/4
R571 2.2K
R503 1.5K
R502 1.5K
R570 2.2K
ZD504 MTZJ7.5A
ZD505 MTZJ7.5A
R561 R562 R564 R565 R560 R563 4.7K
R504 47K
C812 4700P
C506 0.01
(Vcc)
(+7.5V)
(ACC)
(DATA)
(A MUTE)
R542 220
C507 390P
ZD503 HZS9A2L
D504 MA152WK
Q501 DTC124K
DATA BUS CONTROL
Q502 DTC144K
Q503 DTA144
R533 22K
R201 18K-1/8
R202 10K-1/4
C202 0.01
V.STABILIZER
Q802 2SD2038
MUTE DRIVER
Q202 2SC4038
R204 4.3K-1/4
Q201 2SA1037K
C201 0.1
R203 10K-1/4
R205 20-1/4
E801 470/16
Q804 DTA143
R801 R802 160-1/4×2
E802 100/25
E803 33/10
ZD801 HZS9A2L
E808 330/6.3
REGULATOR CONTROL
Q803 DTC124K
S701 BUS
R704 10K
R703 10K
(BATT)
(V-CONT)
(+7.5V)
(BUS-SW)
C813 1000P
C811 1000P
CB103
GND GND BATT BATT ACC MUTE D.SW V-CONT GND BUS- BUS+ GND DOR DOL MCLK BCLK D.GND D.OUT D.5V
To Audio P.C.Board (CB201)
TRACKING /FOCUS /SPINDLE /SLED SERVO DRIVER
IC103 BA6298FP
E113 100/10
LEVEL SHIFT
LEVEL SHIFT
R519 750
C502 0.1
V.REGULATOR +5V
Q508 2SB1237
E511 100/10
IC505 MC14538BFEL
VREF2
VREF1
ENABLE
CONTROL
C508 0.1
C510 0.1
R521 330K
C511 0.1
R522 1M
D501 MA152WK
R523 470K
C512 100P
RESET CIRCUIT
Q511 DTC124K
R520 8.2K
R581 10K
R573 27K
R579 47K
R578 47K
BUS DATA DETECTOR
R576 47K
R574 15K
R575 10K
C514 3300P
Q512 DTC144W
IC506 XRA10393F
R580 10K
D
E
F
G
H
I
J
K

▨ CD Signal Line (Digital)
▬ Focus Error Signal Line
╍ Tracking Error Signal Line
▨ Spindle Drive Signal Line
╍ Sled Drive Signal Line

IC103

1	3.85V	15	2.23V
2	3.67V	16	2.22V
3	2.15V	17	3.8V
4	—	18	3.7V
5	7.36V	19	2.14V
6	5.12V	20	—
7	7.97V	21	7.92V
8	0.07V	22	7.94V
9	—	23	2.23V
10	2.45V	24	—
11	4.08V	25	PS
12	3.46V	26	PS
13	0.07V	27	PS
14	2.23V	28	PS

IC106

1	5.13V	12	PS
2	PS	13	PS
3	PS	14	PS
4	PS	15	PS
5	0.08V	16	5.13V
6	—	17	—
7	—	18	—
8	0.08V	19	PS
9	5V / 0V	20	PS
10	0.08V	21	PS
11	5.06V	22	PS

IC503

1	5V/ 0V	9	5V / 0V
2	5V/ 0V	10	0.05V
3	5V/ 0V	11	5V
4	5V/ 0V	12	3.7V / 2V
5	PS	13	2.9V / 1.1V
6	PS	14	0.05V
7	5V / 0V	15	5.05V
8	0.05V	16	5V

IC108

1	5.1V / 0V	D.SW ON / OFF
2	PS	
3	0.08V	
4	PS	
5	5.12V	

IC504

1	5.07V
2	4.95V
3	5.07V
4	—
5	—
6	—
7	0.05V
8	5.07V

IC505

1	0.05V	9	—
2	PS	10	0.05V
3	5.07V	11	PS
4	0.05V	12	0.04V
5	PS	13	5.07V
6	PS	14	4.61V
7	—	15	0.04V
8	0.05V	16	5.07V

IC506

1	PS
2	PS
3	PS
4	0.05V
5	2.08V
6	PS
7	PS
8	2.08V

	E	C	B		E	C	B
Q201	13.02V	0V	12.96V	Q506	0V	0V	0.6V
Q202	0V	12.98V	0V	Q507	4.86V	12.86V	5.46V
Q401	0V	0.12V	3.9V / 1.3V	Q508	7.31V	5.04V	6.68V
Q501	0V	PS	PS	Q511	0V	5V	0V
Q502	0V	PS	PS	Q512	0V	PS	PS
Q503	4.9V	PS	PS	Q802	7.5V	13V	8.2V
Q504	4.86V	4.9V	0V	Q803	0V	0V	5V
Q505	4.86V	4.86V	0V	Q804	13V	13V	0V

<Measuring Conditions>

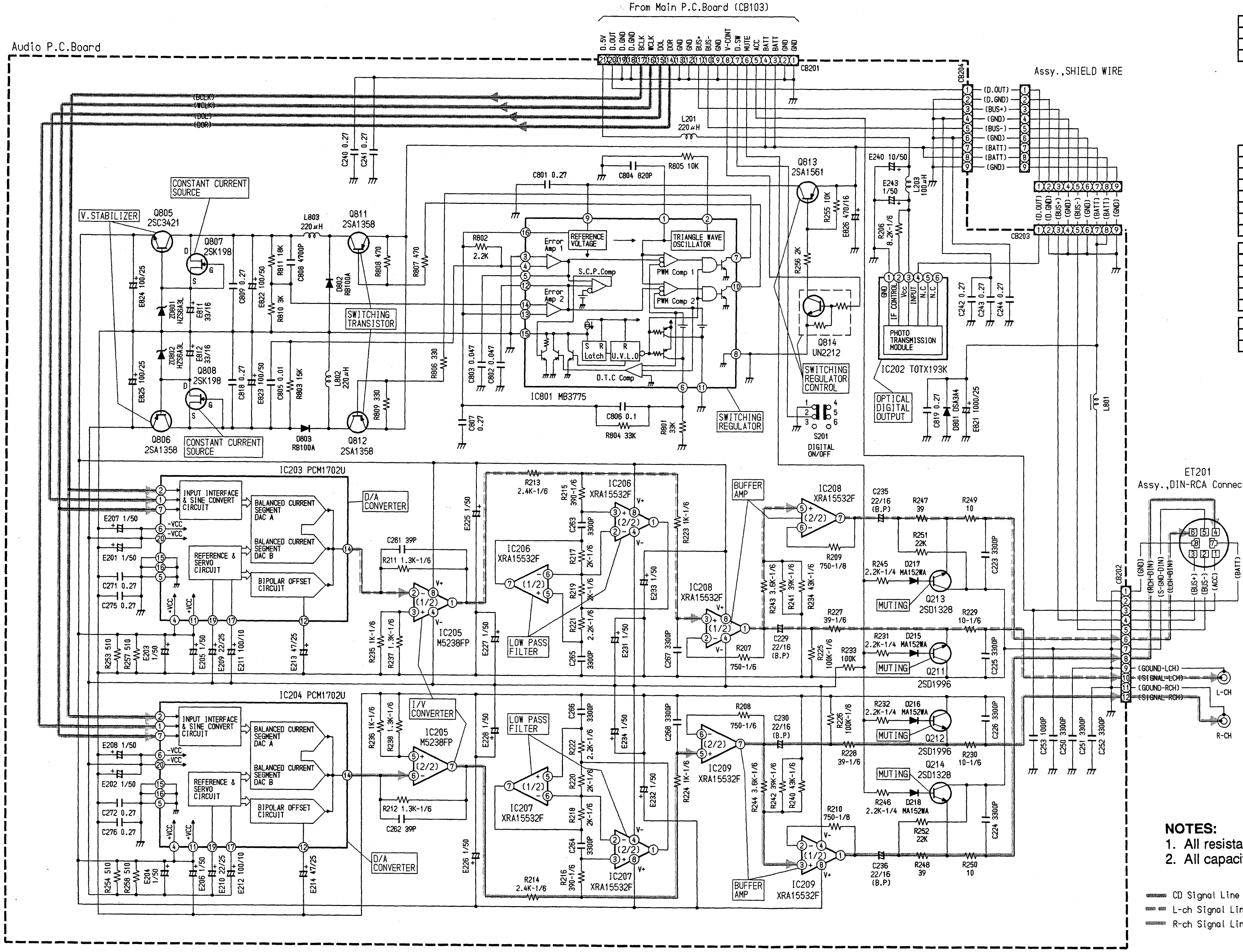
1. Power Supply Voltage : DC14V
2. Measuring Meter : Digital Multi Voltmeter
3. Measuring Point Reference : Between Ground
4. Measuring Condition : Test Disc Play
(A-BEX TCD-782 Track No. 2.1kHz)

NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1{,}000{,}000}$

Schematic Diagram (3/3)

IC	IC203 IC204 IC205 IC801 IC206(1/2) IC207(1/2) IC206(2/2) IC207(2/2) IC208(1/2) IC209 IC208(2/2) IC202
Transistor (Q)	Q805 Q806 Q807 Q808 Q811 Q812 Q813 Q814 Q213 Q212 Q211 Q214



From Main P.C.Board (CB103)
Audio P.C.Board
Assy.,SHIELD WIRE
CB201
CB204
CB203
CB202
D.5V D.OUT D.GND D.GND BCLK WCLK DOL DOR GND GND BUS+ BUS- GND V-CONT D.SW MUTE ACC BATT BATT GND GND
(BCLK) (WCLK) (DOL) (DOR)
(D.OUT) (D.GND) (BUS+) (GND) (BUS-) (GND) (BATT) (BATT) (GND)
L201 220μH
C240 0.27
C241 0.27
CONSTANT CURRENT SOURCE
V.STABILIZER
Q805 2SC3421
Q807 2SK198
Q808 2SK198
Q806 2SA1358
Q811 2SA1358
Q812 2SA1358
L803 220μH
L802 220μH
D802 RB100A
D803 RB100A
ZD801 HZS6A3L
ZD802 HZS6A3L
SWITCHING TRANSISTOR
C801 0.27
C804 820P
R805 10K
R802 2.2K
Error Amp 1
Error Amp 2
REFERENCE VOLTAGE
TRIANGLE WAVE OSCILLATOR
S.C.P.Comp
PWM Comp 1
PWM Comp 2
Latch
U.V.L.O
D.T.C Comp
IC801 MB3775
C806 0.1
R804 33K
R801 33K
SWITCHING REGULATOR
Q813 2SA1561
Q814 UN2212
SWITCHING REGULATOR CONTROL
S201 DIGITAL ON/OFF
E240 10/50
E243 1/50
L203 100μH
R206 8.2K-1/6
PHOTO TRANSMISSION MODULE
GND IF CONTROL Vcc INPUT N.C N.C
IC202 TOTX193K
OPTICAL DIGITAL OUTPUT
C242 0.27
C243 0.27
C244 0.27
C819 0.27
D801 DS43A4
E821 1000/25
L801
IC203 PCM1702U
IC204 PCM1702U
INPUT INTERFACE & SINE CONVERT CIRCUIT
BALANCED CURRENT SEGMENT DAC A
BALANCED CURRENT SEGMENT DAC B
REFERENCE & SERVO CIRCUIT
BIPOLAR OFFSET CIRCUIT
D/A CONVERTER
I/V CONVERTER
IC205 M5238FP
IC206 XRA15532F
IC207 XRA15532F
IC208 XRA15532F
IC209 XRA15532F
LOW PASS FILTER
BUFFER AMP
MUTING
Q211 2SD1996
Q212 2SD1996
Q213 2SD1328
Q214 2SD1328
D215 MA152WA
D216 MA152WA
D217 MA152WA
D218 MA152WA
ET201 Assy.,DIN-RCA Connector
(GND) (RCH-DIN) (S-GND-DIN) (LCH-DIN) (BUS+) (BUS-) (ACC) (BATT)
(GOUND-LCH) (SIGNAL-LCH) (GOUND-RCH) (SIGNAL-RCH)
L-CH
R-CH
1
2
3
4
5
A
B
C
D
E
F
G
H

IC202

1	0.07V
2	2.23V
3	4.92V
4	5.2V / 0V

IC203

1	PS	11	5V
2	PS	12	2.99V
3	—	13	—
4	5V	14	0V
5	0.03V	15	0.03V
6	-4.93V	16	0.03V
7	PS	17	-1.67V
8	—	18	—
9	—	19	-2.37V
10	—	20	-4.93V

IC204

1	PS	11	5V
2	PS	12	3.02V
3	—	13	—
4	5V	14	0V
5	0.03V	15	0.03V
6	-4.93V	16	0.03V
7	PS	17	-1.67V
8	—	18	—
9	—	19	-2.39V
10	—	20	-4.93V

IC205~209

1	0V
2	0V
3	0V
4	-4.93V
5	0V
6	0V
7	0V
8	5V

IC801

1	PS	9	14.9V
2	1.27V	10	PS
3	0.03V	11	0.03V
4	0.06V	12	1.85V
5	1.91V	13	1.32V
6	0.68V	14	1.31V
7	PS	15	0.03V
8	0.03V	16	1.32V

	E	C	B		E	C	B
Q211	0V	0V	0.72V	Q806	-5.01V	-8.5V	-5.65V
Q212	0V	0V	0.72V	Q811	15.8V	7.8V	15.3V
Q213	0V	0V	0.72V	Q812	15.8V	7.8V	15.5V
Q214	0V	0V	0.72V	Q813	15.8V	15.784V	15V
Q805	4.97V	8.86V	5.61V	Q814	0V	0.082V	4.9V

	G	S	D
Q807	5.61V	5.61V	8.86V
Q808	-8.5V	-5.65V	-5.65V

<Measuring Conditions>

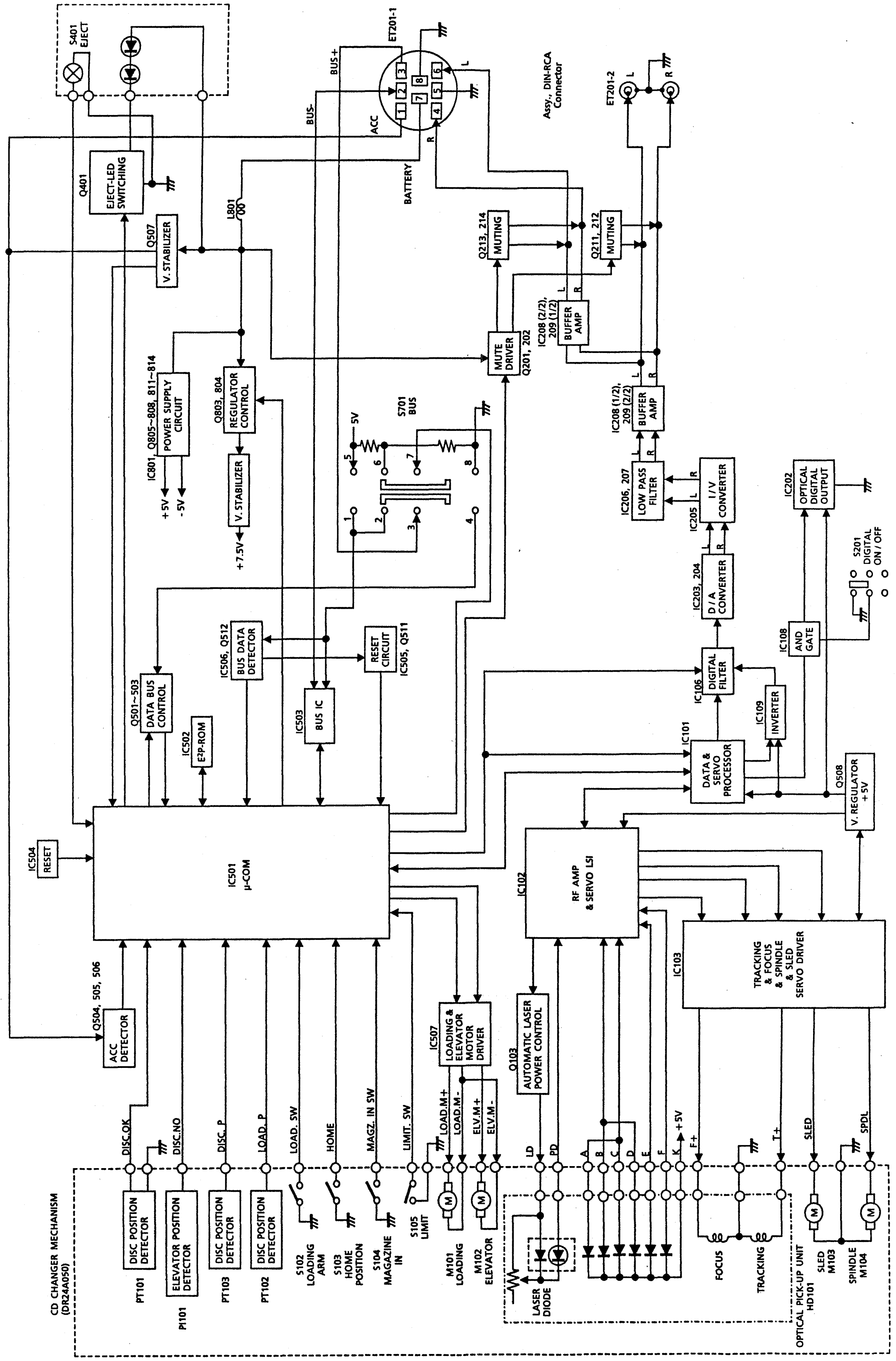
1. Power Supply Voltage : DC14V
2. Measuring Meter : Digital Multi Voltmeter
3. Measuring Point Reference : Between Ground
4. Measuring Condition : Test Disc Play
   (A-BEX TCD-782 Track No. 2.1kHz)

NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1,000,000}$

▬	CD Signal Line (Digital)
▬ ▬	L-ch Signal Line
▬	R-ch Signal Line

Block Diagram


S401 EJECT
Q401 EJECT-LED SWITCHING
Q507 V. STABILIZER
L801
BUS+
BUS-
ACC
BATTERY
ET201-1
Assy., DIN-RCA Connector
ET201-2
Q213, 214 MUTING
Q211, 212 MUTING
Q201, 202 MUTE DRIVER
IC208 (2/2), 209 (1/2) BUFFER AMP
IC208 (1/2), 209 (2/2) BUFFER AMP
IC801, Q805~808, 811~814 POWER SUPPLY CIRCUIT
+5V
-5V
Q803, 804 REGULATOR CONTROL
Q802 V. STABILIZER
+7.5V
5V
S701 BUS
IC206, 207 LOW PASS FILTER
IC205 I/V CONVERTER
IC202 OPTICAL DIGITAL OUTPUT
S201 DIGITAL ON / OFF
IC203, 204 D/A CONVERTER
IC108 AND GATE
IC106 DIGITAL FILTER
IC109 INVERTER
IC101 DATA & SERVO PROCESSOR
Q508 V. REGULATOR +5V
IC506, Q512 BUS DATA DETECTOR
IC505, Q511 RESET CIRCUIT
Q501~503 DATA BUS CONTROL
IC502 EEP-ROM
IC503 BUS IC
IC504 RESET
IC501 µ-COM
IC102 RF AMP & SERVO LSI
IC103 TRACKING & FOCUS & SPINDLE & SLED SERVO DRIVER
Q504, 505, 506 ACC DETECTOR
IC507 LOADING & ELEVATOR MOTOR DRIVER
Q102 AUTOMATIC LASER POWER CONTROL
DISC OK
DISC NO
DISC P
LOAD P
LOAD. SW
HOME
MAGZ. IN SW
LIMIT. SW
LOAD.M+
LOAD.M-
ELV.M+
ELV.M-
LD
PD
A
B
C
D
E
F
K
+5V
F+
T+
SLED
SPDL
CD CHANGER MECHANISM (DR24A050)
PT101 DISC POSITION DETECTOR
PI101 ELEVATOR POSITION DETECTOR
PT103 DISC POSITION DETECTOR
PT102 DISC POSITION DETECTOR
S102 LOADING ARM
S103 HOME POSITION
S104 MAGAZINE IN
S105 LIMIT
M101 LOADING
M102 ELEVATOR
LASER DIODE
FOCUS
TRACKING
OPTICAL PICK-UP UNIT HD101
SLED M103
SPINDLE M104

Electrical Parts List

Resistor : Carbon resistors under 1 / 4 watts are not mentioned in the parts list, please confirm them by schematic diagram.
Capacitor : µF=microfarads, pF=picofarads

Abbreviations

RES.= Resistor
C.F.= Carbon Film
M.F.= Metal Film
M.O.= Metal Oxide Film
M.P.= Metal Plate
TR.= Transistor
TRANS.= Transformer
CP.= Chip

CAP.= Capacitor
ELY.= Electrolytic
CER.= Ceramic
MYL.= Mylar
TAN.= Tantalum
POLY.= Polystyrol
PP.= Polypropylene
PLT.= Polyethylene
PF.= Polyester Film

Main P. C. Board

IC's

Symbol No.	Part No.	Description
IC101	51T25985W02	TC9236AF
IC102	51T25984W01	TA8191F
IC103	51T45577W02	BA6298FP
IC106	51T65109W01	SM5841CS
IC108	51T15731W08	TC7S08F
IC109	51T45285W02	SC7SU04F
IC501	51T45552W31	45552W31
IC502	51T45522W02	X24LC01SI
IC503	51T55070W04	MB88385APF
IC504	51T35308W01	M62007FP
IC505	51T25370W01	MC14538BFEL
IC506	51T73285F21	XRA10393F
IC507	51T45571W02	LB1836M

Transistors

Symbol No.	Part No.	Description
Q102	48T63420F01	CP., 2SA1037K
Q103	48T83417F03	2SB1237
Q111	48T94582F01	CP., 2SC4081
Q112	48T62967F09	CP., DTC114TK
or	48T64222F05	CP., UN2215
Q113	48T62967F09	CP., DTC114TK
or	48T64222F05	CP., UN2215
Q114	48T62967F03	CP., DTC124K
or	48T64222F02	CP., UN2212
Q115	48T62966F03	CP., DTA124
or	48T64221F02	CP., UN2112
Q116	48T62967F03	CP., DTC124K
or	48T64222F02	CP., UN2212
Q201	48T63420F01	CP., 2SA1037K
Q202	48T82758F01	2SC4038
Q401	48T62967F02	CP., DTC114K
Q501	48T62967F03	CP., DTC124K
or	48T64222F02	CP., UN2212
Q502	48T62967F04	CP., DTC144K
or	48T64222F03	CP., UN2213
Q503	48T62966F04	CP., DTA144
or	48T64221F03	CP., UN2113
Q504	48T62966F03	CP., DTA124
or	48T64221F02	CP., UN2112
Q505	48T62966F03	CP., DTA124
or	48T64221F02	CP., UN2112
Q506	48T63417F01	CP., 2SC2412K
Q507	48T83835F03	2SD1859
Q508	48T83417F03	2SB1237
Q511	48T62967F03	CP., DTC124K
or	48T64222F02	CP., UN2212
Q512	48T62967F08	CP., DTC144W
Q802	48T35145W03	2SD2038
Q803	48T62967F03	CP., DTC124K
or	48T64222F02	CP., UN2212
Q804	48T62966F01	CP., DTA143

Diodes

Symbol No.	Part No.	Description
D104	48T25651W02	CP., MA152WK
D501	48T25651W02	CP., MA152WK
D502	48T25651W01	CP., MA152WA
D503	48T25651W02	CP., MA152WK
D504	48T25651W02	CP., MA152WK
ZD501	48T25766W03	Zener, HZS6A3L
ZD502	48T25766W03	Zener, HZS6A3L
ZD503	48T25766W20	Zener, HZS9A2L
ZD504	48T45012W35	Zener, MTZJ7.5A
ZD505	48T45012W35	Zener, MTZJ7.5A
ZD506	48T45012W29	Zener, MTZJ6.2A
ZD801	48T25766W20	Zener, HZS9A2L

Thermistor

Symbol No.	Part No.	Description
TH501	48T93439F06	100K ohm

Crystals

Symbol No.	Part No.	Description
X101	91T25806W92	16.9344MHz
X501	91T95076F07	CER. Lock, 8MHz
X502	91T25773W16	4MHz

Switch

Symbol No.	Part No.	Description
S701	40T16358W03	SSSS9 (BUS)

Symbol No.	Part No.	Description
Capacitors		
C101	08S53332F57	CP., 0.1μF
E101	23T55402W19	ELY., 100μF / 16V
E102	23T55402W15	ELY., 10μF / 16V
C103	08S82122F13	CP., 10pF
E103	23T55402W15	ELY., 10μF / 16V
C104	08S82122F13	CP., 10pF
C105	08S65128F63	CP., 3300pF
E105	23T55402W34	ELY., 3.3μF / 50V
C106	08S65128F63	CP., 3300pF
C107	08S65128F35	CP., 100pF
E107	23T74437F11	TAN., 10μF / 6.3V
C108	08S65128F69	CP., 0.01μF
E108	23T74437F30	TAN., 4.7μF / 16V
C109	08S65128F69	CP., 0.01μF
E109	23T74437F09	TAN., 4.7μF / 6.3V
C110	08S65128F69	CP., 0.01μF
E110	23T74437F30	TAN., 4.7μF / 16V
C111	08S65128F57	CP., 1000pF
E111	23T74437F09	TAN., 4.7μF / 6.3V
E112	23T74437F09	TAN., 4.7μF / 6.3V
C113	08T15399W01	CP., 0.022μF
E113	23T55402W13	ELY., 100μF / 10V
C114	08S65128F64	CP., 3900pF
C115	08T35374W01	CP., 0.1μF
C116	08S65128F43	CP., 220pF
C117	08S65128F62	CP., 2700pF
E117	23T55402W31	ELY., 0.47μF / 50V
C118	08T15399W03	CP., 0.047μF
C119	08S65128F29	CP., 56pF
C120	08S65128F69	CP., 0.01μF
E120	23T55402W15	ELY., 10μF / 16V
C121	08S65128F13	CP., 12pF
E121	23T55402W15	ELY., 10μF / 16V
C122	08S65128F69	CP., 0.01μF
C123	08T15399W03	CP., 0.047μF
C124	08S82122F06	CP., 3pF
C126	08T15807W05	CP., 0.1μF
C127	08T15807W05	CP., 0.1μF
E128	23T74437F30	TAN., 4.7μF / 16V
C129	08S65128F69	CP., 0.01μF
C130	08S65128F65	CP., 4700pF
C133	08S65128F69	CP., 0.01μF
E141	23T74437F30	TAN., 4.7μF / 16V
C140	08S65128F65	CP., 4700pF
C142	08S65128F60	CP., 1800pF
C143	08S65128F69	CP., 0.01μF
C145	08S65128F69	CP., 0.01μF
C150	08T15399W03	CP., 0.047μF
E150	23T55402W15	ELY., 10μF / 16V
C151	08T15399W03	CP., 0.047μF
C152	08T15399W03	CP., 0.047μF
C153	08T15399W03	CP., 0.047μF
C155	08T15399W03	CP., 0.047μF
C201	08S65128F76	CP., 0.1μF
C202	08S65128F69	CP., 0.01μF
C208	08S82122F23	CP., 27pF
C209	08S65128F12	CP., 10pF
C210	08S82122F21	CP., 22pF
C211	08S82122F21	CP., 22pF
C212	08S82122F21	CP., 22pF
C213	08S82122F21	CP., 22pF
C501	08T15399W03	CP., 0.047μF
E501	23T74437F32	TAN., 10μF / 16V
C502	08S53332F57	CP., 0.1μF
C503	08S53332F57	CP., 0.1μF
C504	08S53332F57	CP., 0.1μF
E504	23T55402W32	ELY., 1μF / 50V
C505	08S82122F19	CP., 18pF
C506	08S65128F69	CP., 0.01μF
C507	08S65128F49	CP., 390pF
C508	08S53332F57	CP., 0.1μF
C509	08S82122F19	CP., 18pF
C510	08S65128F76	CP., 0.1μF
E510	23T55402W11	ELY., 33μF / 10V
C511	08S65128F76	CP., 0.1μF
E511	23T55402W13	ELY., 100μF / 10V
C512	08S65128F35	CP., 100pF
C513	08S53332F57	CP., 0.1μF
C514	08S65128F63	CP., 3300pF
C520	08S65128F57	CP., 1000pF
C586	08S65128F72	CP., 0.022μF
C587	08S65128F72	CP., 0.022μF
C588	08S65128F72	CP., 0.022μF
C589	08S65128F72	CP., 0.022μF
C590	08S65128F72	CP., 0.022μF
C591	08S65128F72	CP., 0.022μF
C592	08S65128F72	CP., 0.022μF
E801	23T35119W01	ELY., 470μF / 16V
E802	23T00149L36	ELY., 100μF / 25V
E803	23T55402W11	ELY., 33μF / 10V
E804	23T55402W15	ELY., 10μF / 16V
C805	08S53332F57	CP., 0.1μF
E808	23T55402W09	ELY., 330μF / 6.3V
C810	08S65128F57	CP., 1000pF
C811	08S65128F57	CP., 1000pF
C812	08S65128F65	CP., 4700pF
C813	08S65128F57	CP., 1000pF
C814	08S82122F21	CP., 22pF
C815	08S82122F21	CP., 22pF

Symbol No.	Part No.	Description
Resistors (All resistors are chip 1/10W±5% unless otherwise noted.)		
R102	06S64996F18	470K ohm
R103	06S64995F39	270 ohm
R105	06S64995F89	33K ohm
R106	06S64995F85	22K ohm
R107	06S64996F10	220K ohm
R108	06S64996F02	100K ohm
R109	06S64995F83	18K ohm
R110	06S64995F57	1.5K ohm
R111	06S64995F83	18K ohm
R112	06S64995F91	39K ohm
R113	06S64995F53	1K ohm
R114	06S64996F10	220K ohm
R115	06S64995F77	10K ohm
R116	06S64995F93	47K ohm
R117	06S64996F30	2.2M ohm
R118	06S64995F89	33K ohm
R120	06S64995F77	10K ohm
R121	06S64995F87	27K ohm
R122	06S64995F63	2.7K ohm
R123	06S64996F08	180K ohm
R124	06S64995F83	18K ohm
R125	06S64995F93	47K ohm
R126	06S64995F77	10K ohm
R127	06S64996F04	120K ohm
R128	06S64996F02	100K ohm
R129	06S64995F81	15K ohm
R130	06S64995F85	22K ohm
R131	06S64995F77	10K ohm
R132	06S64995F77	10K ohm
R133	06S64995F77	10K ohm
R134	06S64996F20	560K ohm
R135	06S64996F02	100K ohm
R136	06S64995F61	2.2K ohm
R137	06S64995F77	10K ohm
R138	06S64995F81	15K ohm
R139	06S64995F69	4.7K ohm
R140	06S64995F69	4.7K ohm
R141	06S70072F05	10 ohm 1/4W
R144	06S64995F53	1K ohm
R145	06S64995F47	560 ohm
R146	06S64995F81	15K ohm
R147	06S64995F97	68K ohm
R148	06S64995F89	33K ohm
R150	06S64995F29	100 ohm
R151	06S64995F29	100 ohm
R167	06S64996F04	120K ohm
R169	06S64995F38	240 ohm
R170	06S64995F38	240 ohm
R171	06S64995F38	240 ohm
R172	06S64995F38	240 ohm
R173	06S64995F45	470 ohm
R174	06S64995F48	620 ohm
R179	06S64995F63	2.7K ohm
R180	06S64995F77	10K ohm
R181	06S64995F85	22K ohm
R185	06S64995F83	18K ohm
R186	06S64995F53	1K ohm
R187	06S64995F53	1K ohm
R188	06S64995F65	3.3K ohm
R189	06S64996F18	470K ohm
R190	06S64995F93	47K ohm
R192	06S64995F77	10K ohm
R194	06S64995F53	1K ohm
R195	06S64995F53	1K ohm
R196	06S64995F45	470 ohm
R201	06S53330F83	18K ohm 1/8W
R202	06S70072F77	10K ohm 1/4W
R203	06S70072F77	10K ohm 1/4W
R204	06S70072F68	4.3K ohm 1/4W
R205	06S70072F12	20 ohm 1/4W
R501	06S64995F37	220 ohm
R502	06S64995F57	1.5K ohm
R503	06S64995F57	1.5K ohm
R504	06S64995F93	47K ohm
R505	06S64996F02	100K ohm
R506	06S64995F43	390 ohm
R507	06S64995F83	18K ohm
R508	06S64995F83	18K ohm
R509	06S64995F89	33K ohm
R510	06S64995F45	470 ohm
R511	06S64995F89	33K ohm
R512	06S64995F93	47K ohm
R513	06S64995F77	10K ohm
R514	06S64995F77	10K ohm
R516	06S64996F10	220K ohm
R517	06S64995F53	1K ohm
R518	06S64995F50	750 ohm
R519	06S64995F50	750 ohm
R520	06S64995F75	8.2K ohm
R521	06S64996F14	330K ohm
R522	06S64996F26	1M ohm
R523	06S64996F18	470K ohm
R533	06S64995F85	22K ohm
R534	06S64995F85	22K ohm
R535	06S64995F93	47K ohm
R536	06S64995F93	47K ohm
R541	06S64995F93	47K ohm
R542	06S64995F37	220 ohm
R550	06S64995F69	4.7K ohm
R560	06S64995F69	4.7K ohm
R561	06S64995F69	4.7K ohm
R562	06S64995F69	4.7K ohm

Symbol No.	Part No.	Description
R563	06S64995F69	4.7K ohm
R564	06S64995F69	4.7K ohm
R565	06S64995F69	4.7K ohm
R566	06S70072F34	160 ohm 1/4W
R567	06S70072F34	160 ohm 1/4W
R568	06S70072F34	160 ohm 1/4W
R569	06S70072F34	160 ohm 1/4W
R570	06S64995F61	2.2K ohm
R571	06S64995F61	2.2K ohm
R573	06S64995F87	27K ohm
R574	06S64995F81	15K ohm
R575	06S64995F77	10K ohm
R576	06S64995F93	47K ohm
R578	06S64995F93	47K ohm
R579	06S64995F93	47K ohm
R580	06S64995F77	10K ohm
R581	06S64995F77	10K ohm
R590	06S64995F29	100 ohm
R591	06S64995F29	100 ohm
R592	06S64995F29	100 ohm
R603	06S64996F02	100K ohm
R604	06S64995F93	47K ohm
R703	06S64995F77	10K ohm
R704	06S64995F77	10K ohm
R801	06S70072F34	160 ohm 1/4W
R802	06S70072F34	160 ohm 1/4W
R812	06S70072F13	22 ohm 1/4W
VR101	18T91059F20	Variable, 150K ohm
VR102	18T45241W14	Variable, 15K ohm
VR103	18T45241W09	Variable, 2.2K ohm

Audio P. C. Board

IC's

Symbol No.	Part No.	Description
IC203	51T65512W01	PCM1702U
IC204	51T65512W01	PCM1702U
IC205	51T80136F04	M5238FP
IC206	51T25154W21	XRA15532F
IC207	51T25154W21	XRA15532F
IC208	51T25154W21	XRA15532F
IC209	51T25154W21	XRA15532F
IC801	51T35309W01	MB3775

Transistors

Symbol No.	Part No.	Description
Q211	48T90183F04	2SD1996
Q212	48T90183F04	2SD1996
Q213	48T63788F01	CP., 2SD1328
Q214	48T63788F01	CP., 2SD1328
Q805	48T69176F02	2SC3421
Q806	48T69177F02	2SA1358
Q807	48T52443F03	FET, CP. 2SK198
Q808	48T52443F03	FET, CP. 2SK198
Q811	48T69177F02	2SA1358
Q812	48T69177F02	2SA1358
Q813	48T82757F01	2SA1561
Q814	48T64222F02	CP., UN2212

Diodes

Symbol No.	Part No.	Description
D215	48T25651W01	CP., MA152WA
D216	48T25651W01	CP., MA152WA
D217	48T25651W01	CP., MA152WA
D218	48T25651W01	CP., MA152WA
D801	48T68580F02	DSA3A4
D802	48T25664W01	RB100A
D803	48T25664W01	RB100A
ZD801	48T83128F03	Zener, HZS6A3L
ZD802	48T83128F03	Zener, HZS6A3L

Coils

Symbol No.	Part No.	Description
L201	24T50508F38	Inductor, 220μH
L203	24T50508F34	Inductor, 100μH
L801	25T55309W03	Choke
L802	24T16271W13	220μH
L803	24T16271W13	220μH

Switch

Symbol No.	Part No.	Description
S201	40T25473W02	Slide, SSSF1 (DIGITAL ON / OFF)

Capacitors

Symbol No.	Part No.	Description
E201	23T45102W21	ELY., 1μF / 50V
E202	23T45102W21	ELY., 1μF / 50V
E203	23T45102W21	ELY., 1μF / 50V
E204	23T45102W21	ELY., 1μF / 50V
E205	23T45102W21	ELY., 1μF / 50V

Symbol No.	Part No.	Description
E206	23T45102W21	ELY., 1μF / 50V
E207	23T45102W21	ELY., 1μF / 50V
E208	23T45102W21	ELY., 1μF / 50V
E209	23T45102W12	ELY., 22μF / 25V
E210	23T45102W12	ELY., 22μF / 25V
E211	23T45102W04	ELY., 100μF / 10V
E212	23T45102W04	ELY., 100μF / 10V
E213	23T45102W13	ELY., 47μF / 25V
E214	23T45102W13	ELY., 47μF / 25V
C223	08T55401W19	CP., 3300pF
C224	08T55401W19	CP., 3300pF
C225	08T55390W11	PF., 3300pF
E225	23T45102W21	ELY., 1μF / 50V
C226	08T55390W11	PF., 3300pF
E226	23T45102W21	ELY., 1μF / 50V
E227	23T45102W21	ELY., 1μF / 50V
E228	23T45102W21	ELY., 1μF / 50V
C229	23Q51196W03	ELY., (B.P) 22μF / 16V
C230	23Q51196W03	ELY., (B.P) 22μF / 16V
E231	23T45102W21	ELY., 1μF / 50V
E232	23T45102W21	ELY., 1μF / 50V
E233	23T45102W21	ELY., 1μF / 50V
E234	23T45102W21	ELY., 1μF / 50V
C235	23Q51196W03	ELY., (B.P) 22μF / 16V
C236	23Q51196W03	ELY., (B.P) 22μF / 16V
C240	08T55390W34	TF, 0.27μF
E240	23T45102W25	ELY., 10μF / 50V
C241	08T55390W34	TF, 0.27μF
C242	08T55390W34	TF, 0.27μF
C243	08T55390W34	TF, 0.27μF
E243	23T45102W21	ELY., 1μF / 50V
C244	08T55390W34	TF, 0.27μF
C250	08T55390W11	PF., 3300pF
C251	08T55390W11	PF., 3300pF
C252	08T55390W11	PF., 3300pF
C253	08T55390W05	PF., 1000pF
C261	08T65399W22	MICA, 39pF
C262	08T65399W22	MICA, 39pF
C263	08T00152L15	PP., 3300pF
C264	08T00152L15	PP., 3300pF
C265	08T00152L15	PP., 3300pF
C266	08T00152L15	PP., 3300pF
C267	08T00152L15	PP., 3300pF
C268	08T00152L15	PP., 3300pF
C271	08T55390W34	TF, 0.27μF
C272	08T55390W34	TF, 0.27μF
C275	08T55390W34	TF, 0.27μF
C276	08T55390W34	TF, 0.27μF
C801	08T55390W34	TF, 0.27μF
C802	08T55390W25	TF, 0.047μF
C803	08T55390W25	TF, 0.047μF
C804	08T55390W04	PF., 820pF

Symbol No.	Part No.	Description
C805	08T55390W17	PF., 0.01μF
C806	08T55390W29	TF, 0.1μF
C807	08T55390W34	TF, 0.27μF
C808	08T55390W13	PF., 4700pF
C809	08T55390W34	TF, 0.27μF
E811	23T45102W08	ELY., 33μF / 16V
E812	23T45102W08	ELY., 33μF / 16V
C818	08T55390W34	TF, 0.27μF
C819	08T55390W34	TF, 0.27μF
E821	23T00134L46	ELY., 1000μF / 25V
E822	23T00134L71	ELY., 100μF / 50V
E823	23T00134L71	ELY., 100μF / 50V
E824	23T00134L42	ELY., 100μF / 25V
E825	23T00134L42	ELY., 100μF / 25V
E826	23T35119W01	ELY., 470μF / 16V

Resistors (All resistors are chip 1/4W±5% unless otherwise noted.)

Symbol No.	Part No.	Description
R209	06S53330F50	750 ohm 1/8W
R210	06S53330F50	750 ohm 1/8W
R231	06S70072F61	2.2K ohm
R232	06S70072F61	2.2K ohm
R233	06S53331F02	100K ohm 1/8W
R245	06S70072F61	2.2K ohm
R246	06S70072F61	2.2K ohm
R247	06S70072F19	39 ohm
R248	06S70072F19	39 ohm
R249	06S70072F05	10 ohm
R250	06S70072F05	10 ohm
R251	06S53330F85	22K ohm 1/8W
R252	06S53330F85	22K ohm 1/8W
R253	06S70072F46	510 ohm
R254	06S70072F46	510 ohm
R255	06S70072F77	10K ohm
R256	06S70072F60	2K ohm
R257	06S70072F46	510 ohm
R258	06S70072F46	510 ohm
R801	06S53330F89	33K ohm 1/8W
R802	06S70072F61	2.2K ohm
R803	06S53330F81	15K ohm 1/8W
R804	06S53330F89	33K ohm 1/8W
R805	06S70072F77	10K ohm
R806	06S70072F41	330 ohm
R807	06S70072F45	470 ohm
R808	06S70072F45	470 ohm
R809	06S70072F41	330 ohm
R810	06S70072F64	3K ohm
R811	06S53330F83	18K ohm 1/8W

Symbol No.	Part No.	Description
Switch P. C. Board		
LED's		
LD401	48T84017F02	CP., BG1102W
LD402	48T84017F02	CP., BG1102W
Switch		
S401	40T45327W01	Tact, SKQHFB (EJECT)
Resistors (All resistors are chip 1/4W±5% unless otherwise noted.)		
R401	06S64995F30	110 ohm
R402	06S64995F21	47 ohm
Miscellaneous		
ET201	01T65499W01	Assy., DIN-RCA Connector
HD101	88T15309W01	Pick-Up Unit, SF-87.5
IC202	51T45264W01	IC, TOTX193K
LD101	48T16057W01	LED, AN501 (RED)
LD102	48T16057W01	LED, AN501 (RED)
LD103	48T16057W01	LED, AN501 (RED)
M101	59T90879F01	Motor, Load 6V-260mA (LOADING)
M102	59T15716W01	Motor, Load 8V-330mA (ELEVATOR)
M103	59T52973F03	Motor, Servo 6V-210mA (SLED)
PI101	48T15722W01	Photo Interrupt, GP1S51
PT101	48T15938W05	Transistor, Photo PS5022-B1
PT102	48T15938W05	Transistor, Photo PS5022-B1
PT103	48T15938W04	Transistor, Photo PS5022
Q1003	48T51089F04	Transistor, 2SA937
S102	40T71025F01	Switch, Detector (LOADING)
S103	40T71025F01	Switch, Detector (HOME POSITION)
S104	40T71025F01	Switch, Detector (MAGAZINE)
S105	40T71025F01	Switch, Detector (LIMIT)

Symbol No.	Part No.	Description

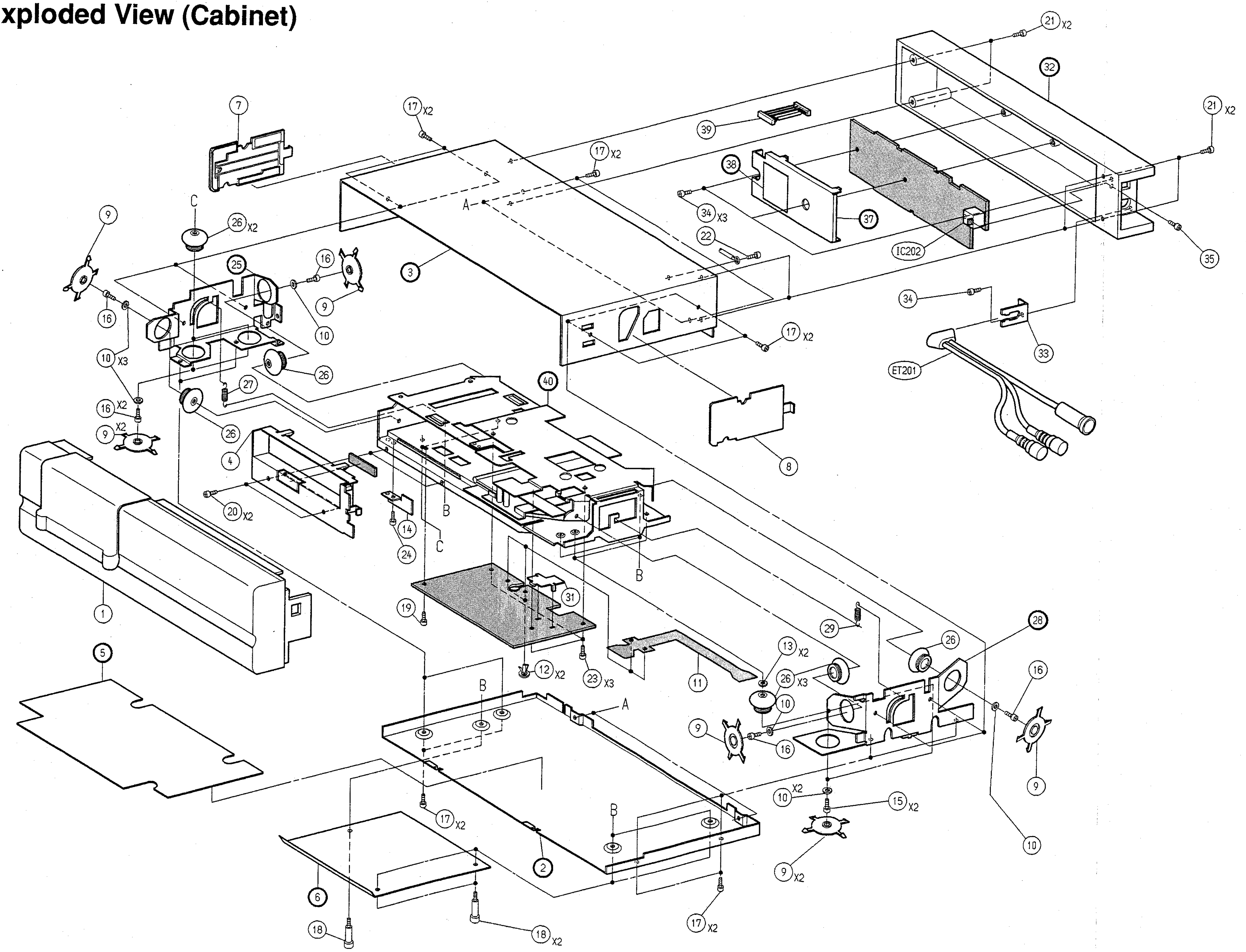
Cabinet Assembly Parts List

Note : No parts number on parts list are not supplied.

※ 部品表に記入されていない部品は供給されません。

Symbol No.	Index	Part No.	Description
1	4-A	13T35250W03	Assy., Front Esucution
4	3-B	64B41449W01	Assy., Plate Inner
7	1-B	15B41292W02	Cover, Plate (L)
8	3-E	15B41293W02	Cover, Plate (R)
9		15B40809W01	Holder, Damper (C)
10		04S40075G60	Washer, Flat Metal (M3.2)
11	4-E	84T35118W01	Flexible P.C.Board
12	4-D	05B41635J04	Rivet, Push
13	4-E	15A50352W01	Spacer, Damper
14	3-C	07A51009W01	Bracket, Transister
15	5-F	03A48040W02	Screw, Damper (M2.6×6)
16		03A48040W01	Screw, Damper (M2.6×3)
17		03S38013W12	Screw, Bind (M2.6×4)
18		03A48046W01	Screw, Transport (M4×22.5)
19	4-C	03A38056W01	Screw, Special (M2.6×6)
20	3-B	03S44205G98	Screw, Pan (M2.6×5)
21		03S40036U11	Screw, W/Washer (M3×8)
22	2-E	03S44205G05	Screw, Pan (M3×5)
23	4-D	03S44205G48	Screw, Pan (M2.6×5)
24	3-C	03S40014G66	Screw, W/Washer (M2×3.5)
26		75B48059W01	Damper, DR (D)
27	3-B	41A41238W01	Spring, Extention (L)
29	4-E	41A41238W02	Spring, Extention (R)
31	4-D	07A61324W01	Bracket, Shield
33	2-F	07A30914W01	Bracket, Bush
34		03S68555F04	Screw, Pan (M2.6×6)
35	2-G	03S70494F10	Screw, Pan (M2.6×10)
39	2-E	01T45064W03	Assy., Shield Wire

Exploded View (Cabinet)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17 X2
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A
34 X3
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IC202
35
C
9
26 X2
25
16
3
16
9
10
10 X3
26
27
40
17 X2
34
33
ET201
16 X2
9 X2
26
4
8
20 X2
14
B
C
24
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29
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23 X3
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13 X2
26 X3
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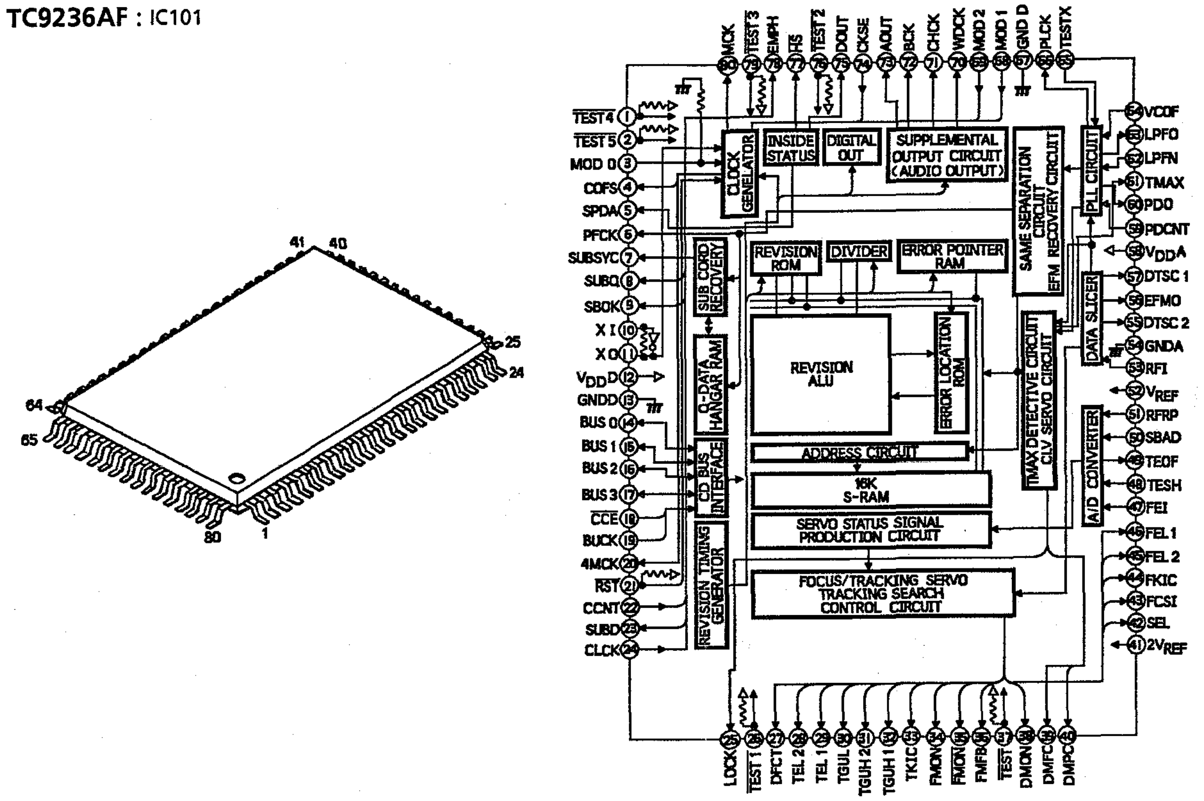
10 X2
15 X2
17 X2
B
2
6
9 X2
10
18
18 X2
17 X2
A
B
C
D
E
F
G
H

Semi - Conductor Lead Identifications

Note : The parts is not mentioned, refer to the Schematic Diagram.

※ 記載されていない部品については回路図を参照願います。

TC9236AF : IC101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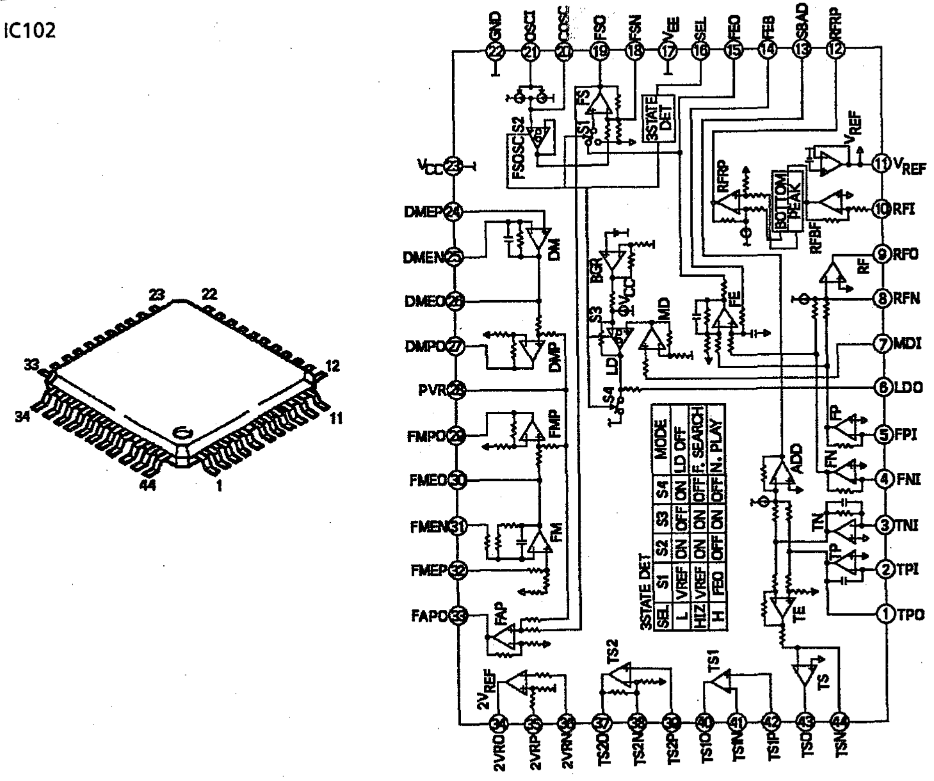
EMPH 78
FS 77
TEST2 76
DOUT 75
CKSE 74
AOUT 73
BCK 72
CHCK 71
WDCK 70
MOD2 69
MOD1 68
GND D 67
PLCK 66
TESTX 65
$\overline{\text{TEST4}}$ 1
$\overline{\text{TEST5}}$ 2
MOD 0 3
COFS 4
SPDA 5
PFCK 6
SUBSYC 7
SUBQ 8
SBOK 9
X I 10
X O 11
$V_{DD}D$ 12
GNDD 13
BUS 0 14
BUS 1 15
BUS 2 16
BUS 3 17
$\overline{\text{CCE}}$ 18
BUCK 19
4MCK 20
RST 21
CCNT 22
SUBD 23
CLCK 24
64 VCOF
63 LPFO
62 LPFN
61 TMAX
60 PDO
59 PDCNT
58 $V_{DD}A$
57 DTSC 1
56 EFMO
55 DTSC 2
54 GNDA
53 RFI
52 V_{REF}
51 RFRP
50 SBAD
49 TEOF
48 TESH
47 FEI
46 FEL 1
45 FEL 2
44 FKIC
43 FCSI
42 SEL
41 $2V_{REF}$
25 LOCK
26 $\overline{\text{TEST 1}}$
27 DFCT
28 TEL 2
29 TEL 1
30 TGUL
31 TGUH 2
32 TGUH 1
33 TKIC
34 FMON
35 $\overline{\text{FMON}}$
36 FMFB
37 $\overline{\text{TEST}}$
38 DMON
39 DMFC
40 DMPC
CLOCK GENELATOR
INSIDE STATUS
DIGITAL OUT
SUPPLEMENTAL OUTPUT CIRCUIT (AUDIO OUTPUT)
SAME SEPARATION CIRCUIT
EFM RECOVERY CIRCUIT
PLL CIRCUIT
SUB CORD RECOVERY
REVISION ROM
DIVIDER
ERROR POINTER RAM
DATA SLICER
Q-DATA HANGAR RAM
REVISION ALU
ERROR LOCATION ROM
TMAX DETECTIVE CIRCUIT
CLV SERVO CIRCUIT
CD BUS INTERFACE
ADDRESS CIRCUIT
16K S-RAM
A/D CONVERTER
SERVO STATUS SIGNAL PRODUCTION CIRCUIT
REVISION TIMING GENERATOR
FOCUS/TRACKING SERVO TRACKING SEARCH CONTROL CIRCUIT

TA8191F : IC102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FSN 18
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FEB 14
SBAD 13
RFRP 12
V_{CC} 23
DMEP 24
DMEN 25
DMEO 26
DMPO 27
PVR 28
FMPO 29
FMEO 30
FMEN 31
FMEP 32
FAPO 33
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9 RFO
8 RFN
7 MDI
6 LDO
5 FPI
4 FNI
3 TNI
2 TPI
1 TPO
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35 2VRP
36 2VRN
37 TS2O
38 TS2N
39 TS2P
40 TS1O
41 TS1N
42 TS1P
43 TSO
44 TSN
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PEAK
RFBF
RF
DM
BGR
V_{CC}
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MD
FE
DMP
LD
S4
FMP
FP
FN
ADD
FM
TN
TP
FAP
TE
TS
2V$_{REF}$
TS2
TS1
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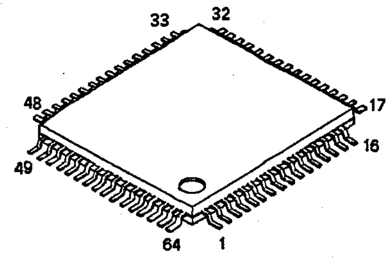
HIZ VREF ON ON OFF F. SEARCH
H FEO OFF ON OFF N. PLAY

45552W31 : IC501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49
64
1

PIN NO.	CODE ADDRESS	I/O	PIN NO.	CODE ADDRESS	I/O	PIN NO.	CODE ADDRESS	I/O
1	SCL	O	23	GND	—	45	GND	—
2	SDA	I/O	24	GND	—	46	AV_{SS}	—
3	NC	—	25	$\overline{\text{LMT-SW}}$	I	47	HI-TEMP	I
4	NC	—	26	LOCK	I	48	LO-TEMP	I
5	NC	—	27	BUS 0	I/O	49	DISC-P	I
6	NC	—	28	BUS 1	I/O	50	LOAD-P	I
7	NC	—	29	BUS 2	I/O	51	DISC-OK	I
8	NC	—	30	BUS 3	I/O	52	$\overline{\text{DISC-NO}}$	I
9	GND	—	31	BUCK	O	53	BUS-SW	I
10	EJT-LED	O	32	$\overline{\text{CCE}}$	O	54	GND	—
11	NC	—	33	BUS-OUT	O	55	AV_{DD}	—
12	A-MUTE	O	34	BUS-DET	I	56	AV_{REF}	—
13	LOD M+	O	35	RESET	I	57	NC	—
14	LOD M−	O	36	BUS-IN	I	58	J-RESET	O
15	ELV M+	O	37	BATT	I	59	NC	—
16	ELV M−	O	38	ACC	I	60	J-RS	O
17	V-CONT	O	39	$\overline{\text{EJT-KEY}}$	I	61	J-R/W	O
18	F-CONT	O	40	V_{DD}	—	62	J-SOUT	O
19	$\overline{\text{LS-RST}}$	O	41	X2	—	63	J-SIN	I
20	$\overline{\text{LOAD-SW}}$	I	42	X1	—	64	J-SCLK	O
21	$\overline{\text{HOME}}$	I	43	GND	—			
22	MAG-SW	I	44	NC	—			

部品単価表

CHA - S609

部品番号	部品名	標準卸価格
01B50968W02	Assy., Bracket	1,200
01T45064W03	Assy., Shield Wire	720
01T65499W01	Assy., DIN-RCA Connector	1,850
01T75057W01	Assy., DIN Connector	3,600
01T75058W01	Assy., RCA Connector	2,240
02A44071U02	Nut, Wing (M6)	45
02B47353F06	Nut, Hex. Flange (M6)	45
03A38056W01	Screw, Special (M2.6×6)	45
03A48040W01	Screw, Damper (M2.6×3)	45
03A48040W02	Screw, Damper (M2.6×6)	45
03A48046W01	Screw, Transport (4×22.5)	70
03B90962F03	Bolt, Hex. Flange (M6×50)	85
03D40121T46	Bolt, Hex. W/Double Washer (M4×6)	45
03S38013W12	Screw, Bind (M2.6×4)	45
03S40014G66	Screw, W/Washer (M2×3.5)	45
03S40036U11	Screw, W/Washer (M3×8)	45
03S44205G05	Screw, Pan (M3×5)	45
03S44205G48	Screw, Pan (M2.6×5)	45
03S44205G98	Screw, Pan (M2.6×5)	45
03S63857F05	Screw, Tapping (M5×15)	45
03S68555F04	Screw, Pan (M2.6×6)	45
03S70494F10	Screw, Pan (M2.6×10)	45
04S40071G22	Washer, Spring Lock (M6.1)	45
04S40075G60	Washer, Flat Metal (M3.2)	50
05B41635J04	Rivet, Push	45
06S53330F50	750 Ω 1/8W	45
06S53330F81	15K Ω 1/8W	45
06S53330F83	18K Ω 1/8W	45
06S53330F85	22K Ω 1/8W	45
06S53330F89	33K Ω 1/8W	45
06S53331F02	100K Ω 1/8W	45
06S64995F21	47 Ω	45
06S64995F29	100 Ω	45
06S64995F30	110 Ω	45
06S64995F37	220 Ω	45
06S64995F38	240 Ω	45
06S64995F39	270 Ω	45
06S64995F43	390 Ω	45
06S64995F45	470 Ω	45
06S64995F47	560 Ω	45
06S64995F48	620 Ω	45
06S64995F50	750 Ω	45
06S64995F53	1K Ω	45
06S64995F57	1.5K Ω	45
06S64995F61	2.2K Ω	45
06S64995F63	2.7K Ω	45
06S64995F65	3.3K Ω	45
06S64995F69	4.7K Ω	45
06S64995F75	8.2K Ω	45
06S64995F77	10K Ω	45
06S64995F81	15K Ω	45
06S64995F83	18K Ω	45
06S64995F85	22K Ω	45
06S64995F87	27K Ω	45
06S64995F89	33K Ω	45
06S64995F91	39K Ω	45
06S64995F93	47K Ω	45
06S64995F97	68K Ω	45
06S64996F02	100K Ω	45
06S64996F04	120K Ω	45
06S64996F08	180K Ω	45
06S64996F10	220K Ω	45
06S64996F14	330K Ω	45
06S64996F18	470K Ω	45
06S64996F20	560K Ω	45
06S64996F26	1M Ω	45
06S64996F30	2.2M Ω	45
06S70072F05	10 Ω 1/4W	45
06S70072F12	20 Ω 1/4W	45
06S70072F13	22 Ω 1/4W	45
06S70072F19	39 Ω	45
06S70072F34	160 Ω 1/4W	45
06S70072F41	330 Ω	45
06S70072F45	470 Ω	45
06S70072F46	510 Ω	45
06S70072F60	2K Ω	45
06S70072F61	2.2K Ω	45
06S70072F64	3K Ω	45
06S70072F68	4.3K Ω 1/4W	45
06S70072F77	10K Ω 1/4W	45
07A30914W01	Bracket, Bush	260
07A51009W01	Bracket, Transister	55
07A61324W01	Bracket, Shield	170
07B31413W02	Bracket, Side	950
08S53332F57	CP., 0.1μF	45
08S65128F12	CP., 10pF	45
08S65128F13	CP., 12pF	45
08S65128F29	CP., 56pF	45
08S65128F35	CP., 100pF	45
08S65128F43	CP., 220pF	45
08S65128F49	CP., 390pF	45
08S65128F57	CP., 1000pF	45
08S65128F60	CP., 1800pF	45
08S65128F62	CP., 2700pF	45
08S65128F63	CP., 3300pF	45
08S65128F64	CP., 3900pF	45
08S65128F65	CP., 4700pF	45
08S65128F69	CP., 0.01μF	45
08S65128F72	CP., 0.022μF	45
08S65128F76	CP., 0.1μF	45
08S82122F06	CP., 3pF	45
08S82122F13	CP., 10pF	45
08S82122F19	CP., 18pF	45
08S82122F21	CP., 22pF	45
08S82122F23	CP., 27pF	45
08T00152L15	PP., 3300pF	130
08T15399W01	CP., 0.022μF	45
08T15399W03	CP., 0.047μF	55
08T15807W05	CP., 0.1μF	100
08T35374W01	CP., 0.1μF	80
08T55390W04	PF., 820pF	45
08T55390W05	PF., 1000pF	45
08T55390W11	PF., 3300pF	45
08T55390W13	PF., 4700pF	45
08T55390W17	PF., 0.01μF	45
08T55390W25	TF, 0.047μF	50
08T55390W29	TF, 0.1μF	60
08T55390W34	TF, 0.27μF	100
08T55401W19	CP., 3300pF	130
08T65399W22	MICA, 39pF	200
13T35250W03	Assy., Front Esucution	2,160
15A50352W01	Spacer, Damper	45
15B40809W01	Holder, Damper (C)	55
15B41292W02	Cover, Plate (L)	330
15B41293W02	Cover, Plate (R)	330
18T45241W09	Variable, 2.2K Ω	140
18T45241W14	Variable, 15K Ω	140
18T91059F20	Variable, 150K Ω	180
23Q51196W03	ELY., (B.P) 22μF / 16V	90
23T00134L42	ELY., 100μF / 25V	70
23T00134L46	ELY., 1000μF / 25V	210
23T00134L71	ELY., 100μF / 50V	110
23T00149L36	ELY., 100μF / 25V	65
23T35119W01	ELY., 470μF / 16V	150
23T45102W04	ELY., 100μF / 10V	75
23T45102W08	ELY., 33μF / 16V	60
23T45102W12	ELY., 22μF / 25V	60
23T45102W13	ELY., 47μF / 25V	75
23T45102W21	ELY., 1μF / 50V	55
23T45102W25	ELY., 10μF / 50V	55
23T55402W09	ELY., 330μF / 6.3V	90
23T55402W11	ELY., 33μF / 10V	55
23T55402W13	ELY., 100μF / 10V	60
23T55402W15	ELY., 10μF / 16V	55
23T55402W19	ELY., 100μF / 16V	95
23T55402W31	ELY., 0.47μF / 50V	55
23T55402W32	ELY., 1μF / 50V	55
23T55402W34	ELY., 3.3μF / 50V	60
23T74437F09	TAN., 4.7μF / 6.3V	100
23T74437F11	TAN., 10μF / 6.3V	130
23T74437F30	TAN., 4.7μF / 16V	150
23T74437F32	TAN., 10μF / 16V	200
24T16271W13	220μH	230
24T50508F34	Inductor, 100μH	50
24T50508F38	Inductor, 220μH	55
25T55309W03	Choke	510
40T16358W03	SSSS9 (BUS)	200
40T25473W02	Slide, SSSF1 (DIGITAL ON / OFF)	240
40T45327W01	Tact, SKQHFB (EJECT)	330
40T71025F01	Switch, Detector	130
41A41238W01	Spring, Extention (L)	50
41A41238W02	Spring, Extention (R)	50
48T15722W01	Photo Interrupt, GP1S51	380
48T15938W04	Transistor, Photo PS5022	200
48T15938W05	Transistor, Photo PS5022-B1	200
48T16057W01	LED, AN501 (RED)	140
48T25651W01	CP., MA152WA	50
48T25651W02	CP., MA152WK	45
48T25664W01	RB100A	140
48T25766W03	Zener, HZS6A3L	45
48T25766W20	Zener, HZS9A2L	45
48T35145W03	2SD2038	310
48T45012W29	Zener, MTZJ6.2A	45
48T45012W35	Zener, MTZJ7.5A	45
48T51089F04	Transistor, 2SA937	55
48T52443F03	FET, CP. 2SK198	190
48T62966F01	CP., DTA143	45
48T62966F03	CP., DTA124	45
48T62966F04	CP., DTA144	45
48T62967F02	CP., DTC114K	45
48T62967F03	CP., DTC124K	45
48T62967F04	CP., DTC144K	45
48T62967F08	CP., DTC144W	45
48T62967F09	CP., DTC114TK	45
48T63417F01	CP., 2SC2412K	45
48T63420F01	CP., 2SA1037K	45
48T63788F01	CP., 2SD1328	80
48T64221F02	CP., UN2112	55
48T64221F03	CP., UN2113	55
48T64222F02	CP., UN2212	90
48T64222F03	CP., UN2213	55
48T64222F05	CP., UN2215	55
48T68580F02	DSA3A4	130
48T69176F02	2SC3421	190
48T69177F02	2SA1358	190
48T82757F01	2SA1561	45
48T82758F01	2SC4038	45
48T83128F03	Zener, HZS6A3L	45
48T83417F03	2SB1237	100
48T83835F03	2SD1859	100
48T84017F02	CP., BG1102W	110

部品番号	部品名	標準卸価格
48T90183F04	2SD1996	75
48T93439F06	100K Ω	100
48T94582F01	CP., 2SC4081	45
51T15731W08	TC7S08F	150
51T25154W21	XRA15532F	340
51T25370W01	MC14538BFEL	370
51T25984W01	TA8191F	1,000
51T25985W02	TC9236AF	1,800
51T35308W01	M62007FP	500
51T35309W01	MB3775	580
51T45264W01	TOTX193K	1,250
51T45285W02	SC7SU04F	140
51T45522W02	X24LC01SI	600
51T45552W31	45552W31	2,100
51T45571W02	LB1836M	530
51T45577W02	BA6298FP	1,000
51T55070W04	MB88385APF	1,400
51T65109W01	SM5841CS	1,140
51T65512W01	PCM1702U	1,750
51T73285F21	XRA10393F	190
51T80136F04	M5238FP	300
59T15716W01	Motor, Load 8V-330mA (ELEVATOR)	900
59T52973F03	Motor, Servo 6V-210mA (SLED)	850
59T90879F01	Motor, Load 6V-260mA (LOADING)	900
64B41449W01	Assy., Plate Inner	840
68P61329W02	Owner's Manual	1,240
75B48059W01	Damper, DR (D)	200
84T35118W01	Flexible P.C.Board	1,420
88T15309W01	Pick-Up Unit, SF-87.5	3,880
91T25773W16	4MHz	440
91T25806W92	16.9344MHz	410
91T95076F07	CER. Lock, 8MHz	210

部品番号	部品名	標準卸価格

ALPI -00534

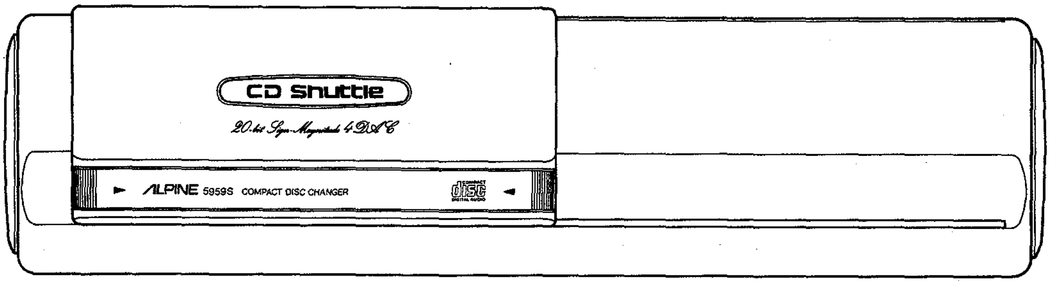
ALPINE®

SERVICE MANUAL

Compact Disc Remote Changer

CD Shuttle

- The model described in this manual is developed from Model 5959. For information that is not mentioned in this service manual, refer to the Service Manual 5959 (68P32103W02).
- For the CD deck mechanism parts (DR24A030) of this model, refer to the Service Manual • DR Series (68P30571W03).


CD Shuttle
20-bit Super-Magnitude 4 DAC
ALPINE 5959S COMPACT DISC CHANGER

534

5959S

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Parts Layout on P. C. Boards and Wiring Diagram (2/2) .... 10 to 12

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Schematic Diagram (2/3) .... 16 to 18

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Packing Assembly Parts List 29

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Semi-Conductor Lead Identifications (only difference) 30

Spare Schematic Diagram Inserted.

Specifications Operation Disassembly Instructions Adjustment Locations Description of IC Terminal Packing Method View	Refer to the Service Manual 5959 (68P32103W02).

FEATURES

The 5959S incorporates the latest technology with the following unique functions and features:

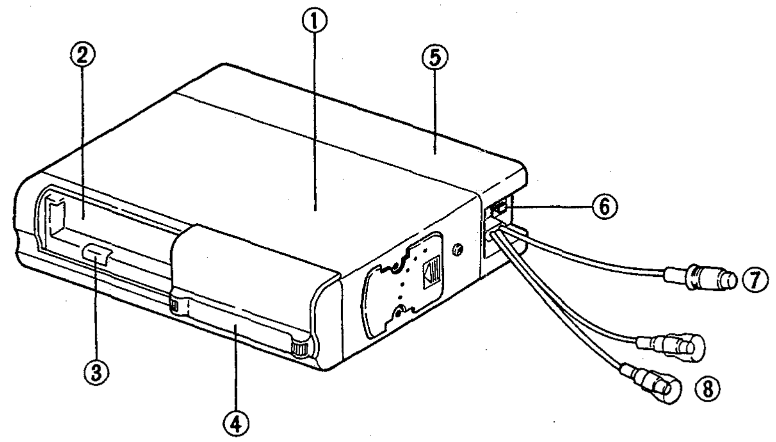
- **OPTICAL DIGITAL OUTPUT**
- **CD Shuttle MOUNTING VERSATILITY**
  The space-saving CD Shuttle can be mounted in a horizontal position, vertical position or one of the other three preset angles between 0° to 90°. This allows the installer to choose from a variety of mounting locations including: the trunk, under or behind the seat, or the glove compartment.
- **8X OVERSAMPLING**
- **20-bit SIGN-MAGNITUDE DAC**
  The Sign-Magnitude method of digital to analog conversion minimizes the zero-crossing distortion. 20-bit technology increases dynamic range and signal-to-noise.
- **HIGH PERFORMANCE, ISOLATED AUDIO SECTION**
  By separating the audio section into its own isolated box, performance equal to high-grade, home preamplifiers is achieved.
- **MAGAZINE HOUSING 6 CDs**
  Six 5-inch (12 cm) compact discs can be housed in the CD magazine and selected by operating your control unit. Any one of the 6 CDs in the magazine can be quickly and easily accessed for playback of the entire disc or individual selections.

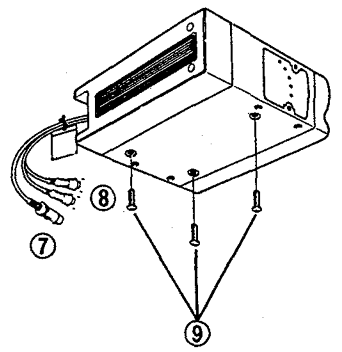
IMPORTANT NOTICE

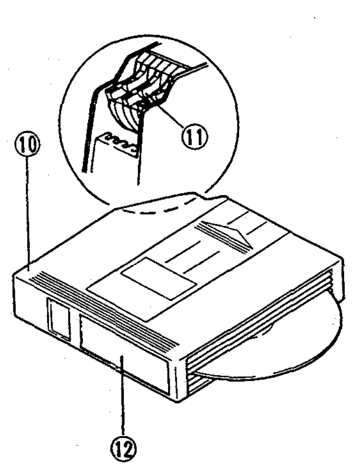
This compact disc Shuttle has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules. This equipment generates and uses radio frequency energy, and it must be installed and used properly in accordance with the manufacturer's instructions.

PARTS IDENTIFICATION

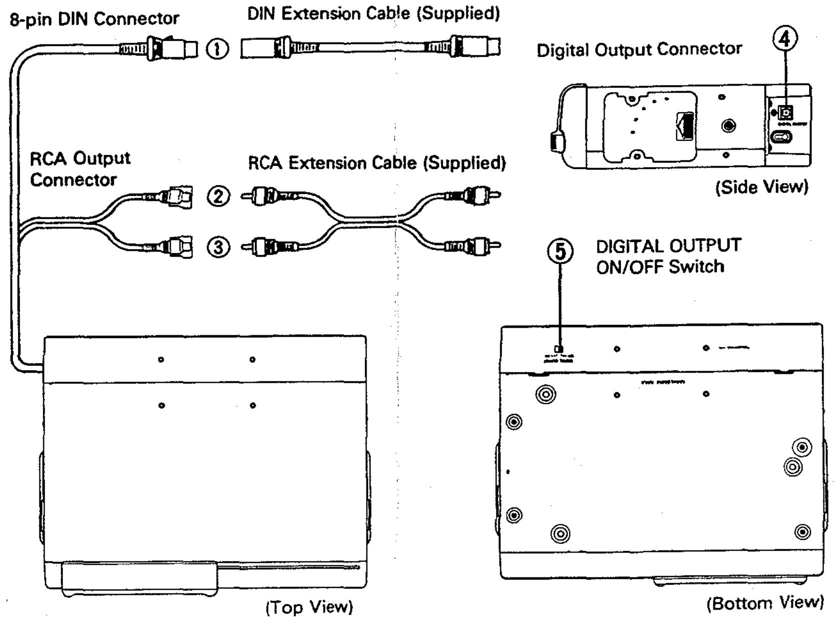
① **CD Shuttle Unit**
② **CD Magazine Insertion Slot**
③ **Eject Button**
Press this button to eject the CD magazine.
④ **CD Magazine Door**
⑤ **Audio Block**
⑥ **Digital Output Connector**
⑦ **8-pin DIN Connector**
⑧ **Audio Connectors (RCA type) for the Right and Left Channels**
⑨ **Shipping Screws**
Must be removed before operating the unit.
⑩ **CD Magazine**
6 discs can be housed in this case.
⑪ **Disc Lever**
⑫ **Disc Index Labels**
Put the Index Label on the CD Magazine.







CONNECTIONS



The 5959S CD Shuttle is not equipped with built-in control unit and power amplifier. Consult with your authorized Alpine dealer for connections of your control unit and power amplifier. Refer to the illustration above for connections of the Shuttle.

NOTE:

The 5959S is designed for 12-volt DC negative ground operation so make sure that your vehicle has this system before making electrical connections.

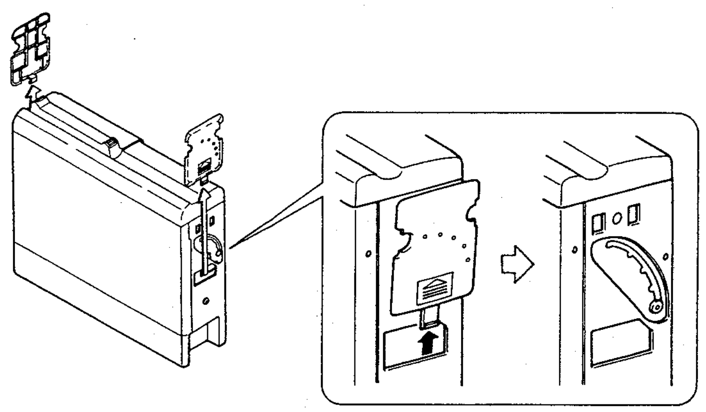
① **8-pin DIN Connector**
Connect this to your control unit or changer control input of your Alpine Shuttle-ready head unit.
② **Right Channel RCA Output Connector (Red)**
Connect this to the right channel input of your control unit.
③ **Left Channel RCA Output Connector (White)**
Connect this to the left channel input of your control unit.
④ **Digital Output Connector**
Connect this output to a processor having a corresponding optical digital input using the fiber-optic cable supplied with the processor.
⑤ **DIGITAL OUTPUT ON/OFF Switch**
Use this switch to turn the digital outputs on and off. Always set to the OFF position when the digital outputs are not being used.

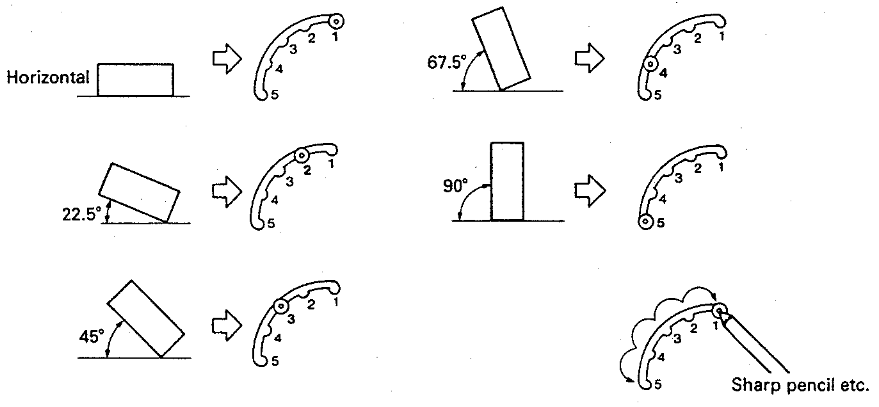
INSTALLATION

Changing of Spring Position

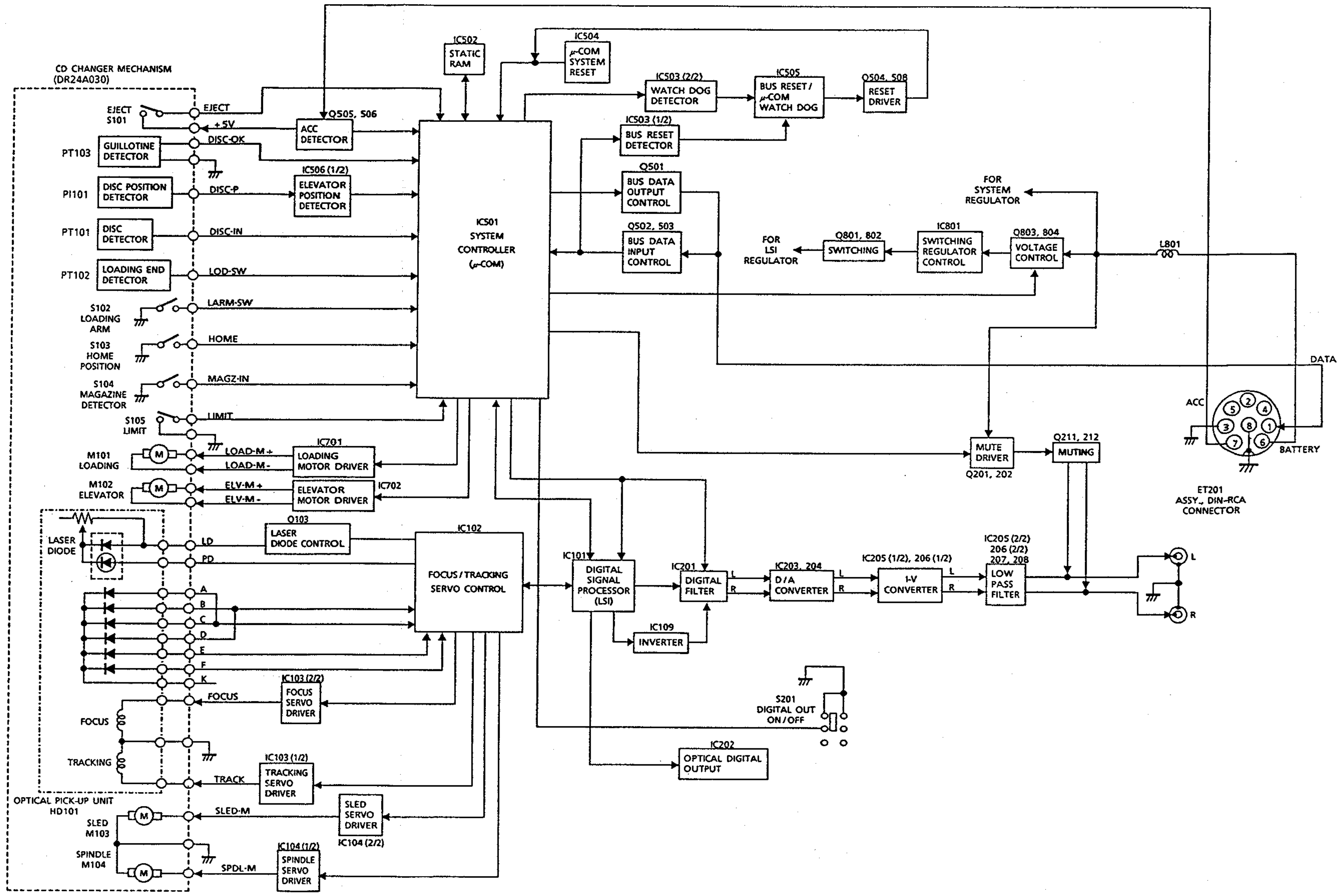
Make sure the mounting angle of the Shuttle installation will fall within the five preset positions (22.5° or 45° from the horizontal or vertical position). The Shuttle is preset at the factory for horizontal mounting. If you wish to install it at any other angle, change the spring configuration as shown.

Slide, in the direction of the arrows, then remove the left and right side covers. Change the position of the spring with your finger or a pointed object. Use the figure below to determine which spring position would be best suited for your chosen mounting location. If the spring configuration is incorrect or the spring positions on the left and right sides are not the same, the shock absorbing mechanism will not function properly. This will prevent the CD Shuttle from operating at its best.



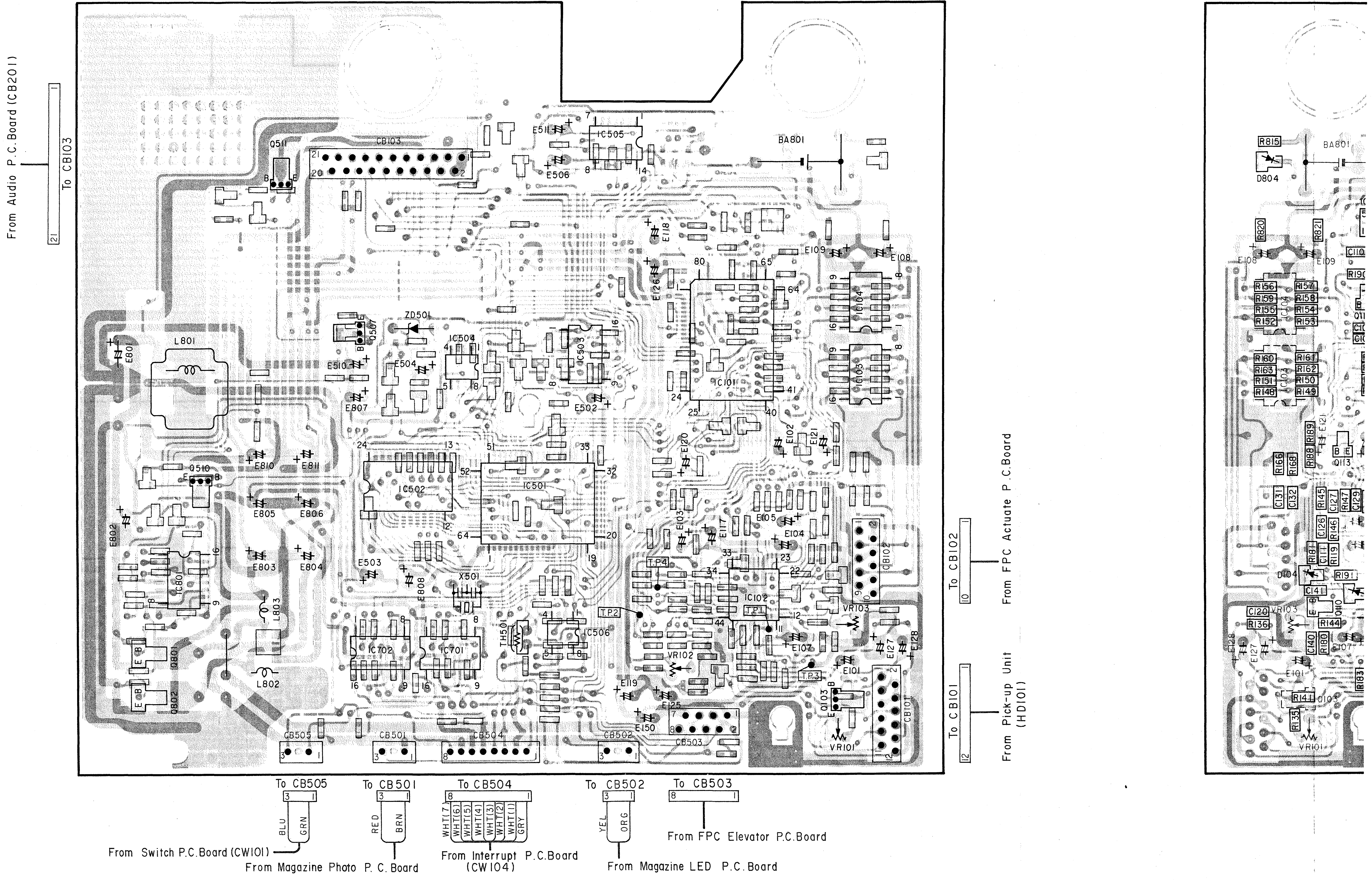

Horizontal
67.5°
22.5°
90°
45°
1
2
3
4
5
Sharp pencil etc.

Block Diagram

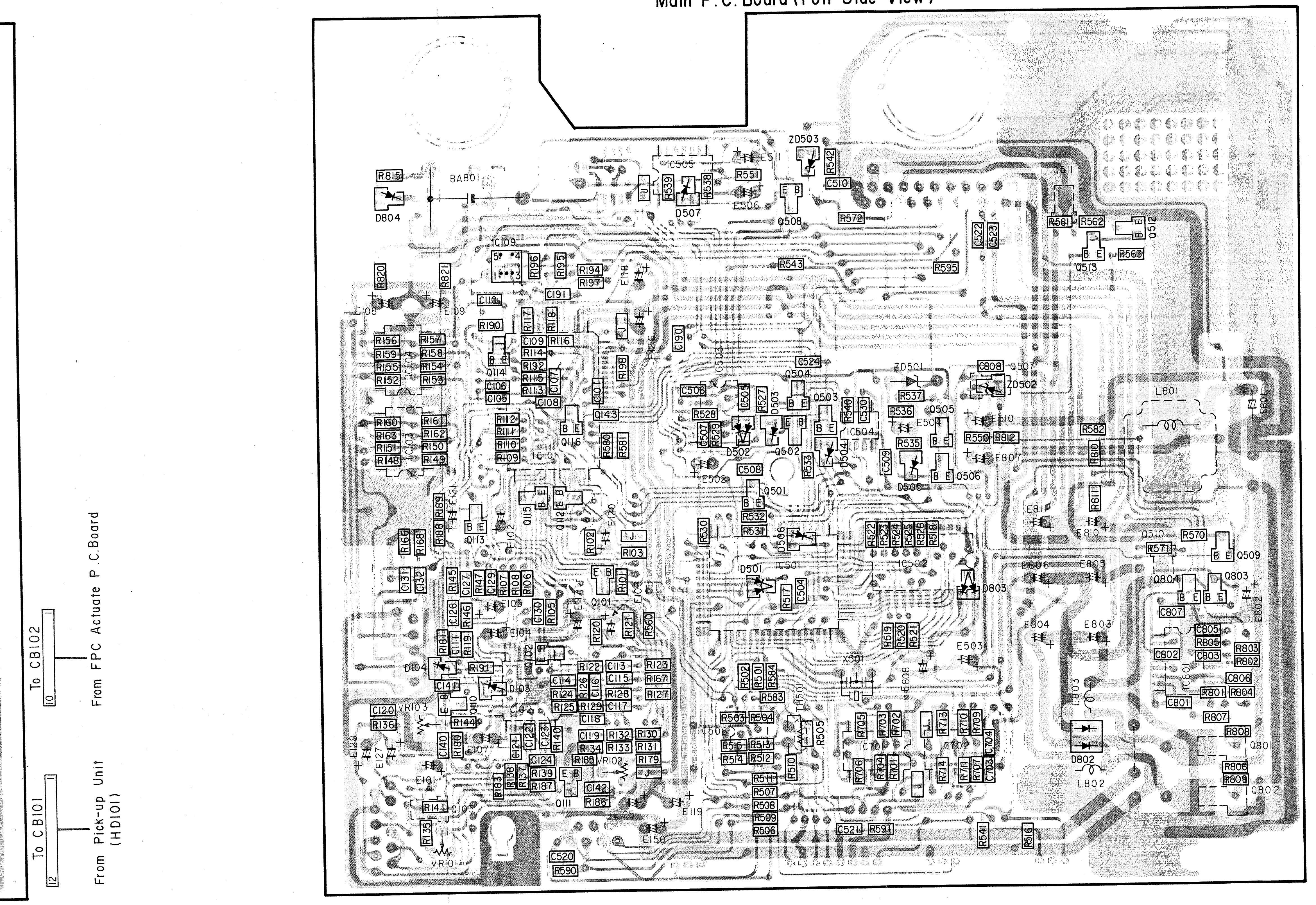

CD CHANGER MECHANISM
(DR24A030)
EJECT
S101
EJECT
+5V
PT103
GUILLOTINE DETECTOR
DISC-OK
PI101
DISC POSITION DETECTOR
DISC-P
PT101
DISC DETECTOR
DISC-IN
PT102
LOADING END DETECTOR
LOD-SW
S102
LOADING
ARM
LARM-SW
S103
HOME
POSITION
HOME
S104
MAGAZINE
DETECTOR
MAGZ-IN
S105
LIMIT
LIMIT
M101
LOADING
LOAD-M+
LOAD-M-
M102
ELEVATOR
ELV-M+
ELV-M-
LASER
DIODE
LD
PD
A
B
C
D
E
F
K
FOCUS
FOCUS
TRACKING
TRACK
OPTICAL PICK-UP UNIT
HD101
SLED
M103
SLED-M
SPINDLE
M104
SPDL-M
M
Q505, 506
ACC DETECTOR
IC506 (1/2)
ELEVATOR POSITION DETECTOR
IC701
LOADING MOTOR DRIVER
IC702
ELEVATOR MOTOR DRIVER
Q103
LASER DIODE CONTROL
IC103 (2/2)
FOCUS SERVO DRIVER
IC103 (1/2)
TRACKING SERVO DRIVER
SLED SERVO DRIVER
IC104 (2/2)
IC104 (1/2)
SPINDLE SERVO DRIVER
IC502
STATIC RAM
IC504
μ-COM SYSTEM RESET
IC501
SYSTEM CONTROLLER
(μ-COM)
IC503 (2/2)
WATCH DOG DETECTOR
IC505
BUS RESET / μ-COM WATCH DOG
Q504, 508
RESET DRIVER
IC503 (1/2)
BUS RESET DETECTOR
Q501
BUS DATA OUTPUT CONTROL
Q502, 503
BUS DATA INPUT CONTROL
FOR LSI REGULATOR
Q801, 802
SWITCHING
IC801
SWITCHING REGULATOR CONTROL
Q803, 804
VOLTAGE CONTROL
FOR SYSTEM REGULATOR
L801
DATA
ACC
BATTERY
1
2
3
4
5
6
7
8
ET201
ASSY., DIN-RCA CONNECTOR
IC102
FOCUS / TRACKING SERVO CONTROL
IC101
DIGITAL SIGNAL PROCESSOR (LSI)
IC201
DIGITAL FILTER
IC109
INVERTER
IC203, 204
D/A CONVERTER
IC205 (1/2), 206 (1/2)
I-V CONVERTER
IC205 (2/2)
206 (2/2)
207, 208
LOW PASS FILTER
L
R
MUTE DRIVER
Q201, 202
Q211, 212
MUTING
S201
DIGITAL OUT
ON / OFF
IC202
OPTICAL DIGITAL OUTPUT

Parts Layout on P.C. Boards and Wiring Diagram (1/2)

Main P.C.Board (Component Side View)


From Audio P.C.Board (CB201)
To CB103
CB103
Q511
BA801
IC505
E511
E506
E118
E126
E109
E108
IC104
IC103
IC101
L801
E801
ZD501
Q507
IC504
E510
E504
E807
IC503
E502
E102
E121
E120
E810
E811
Q510
IC502
IC501
E805
E806
E802
IC801
E803
E804
E503
E808
X501
E103
E117
E105
E104
T.P.4
IC102
T.P.2
T.P.1
VR103
CB102
L803
Q801
Q802
L802
IC702
IC701
TH501
IC506
VR102
E107
E127
E128
T.P.3
E101
E119
E125
E150
Q103
VR101
CB101
CB505
CB501
CB504
CB502
CB503
To CB102
From FPC Actuate P.C.Board
To CB101
From Pick-up Unit (HD101)
To CB505
BLU
GRN
From Switch P.C.Board (CW101)
To CB501
RED
BRN
From Magazine Photo P. C. Board
To CB504
WHT(7)
WHT(6)
WHT(5)
WHT(4)
WHT(3)
WHT(2)
WHT(1)
GRY
From Interrupt P.C.Board (CW104)
To CB502
YEL
ORG
From Magazine LED P.C.Board
To CB503
From FPC Elevator P.C.Board
1
2
3
4
5
A
B
C
D
E
F
G
H

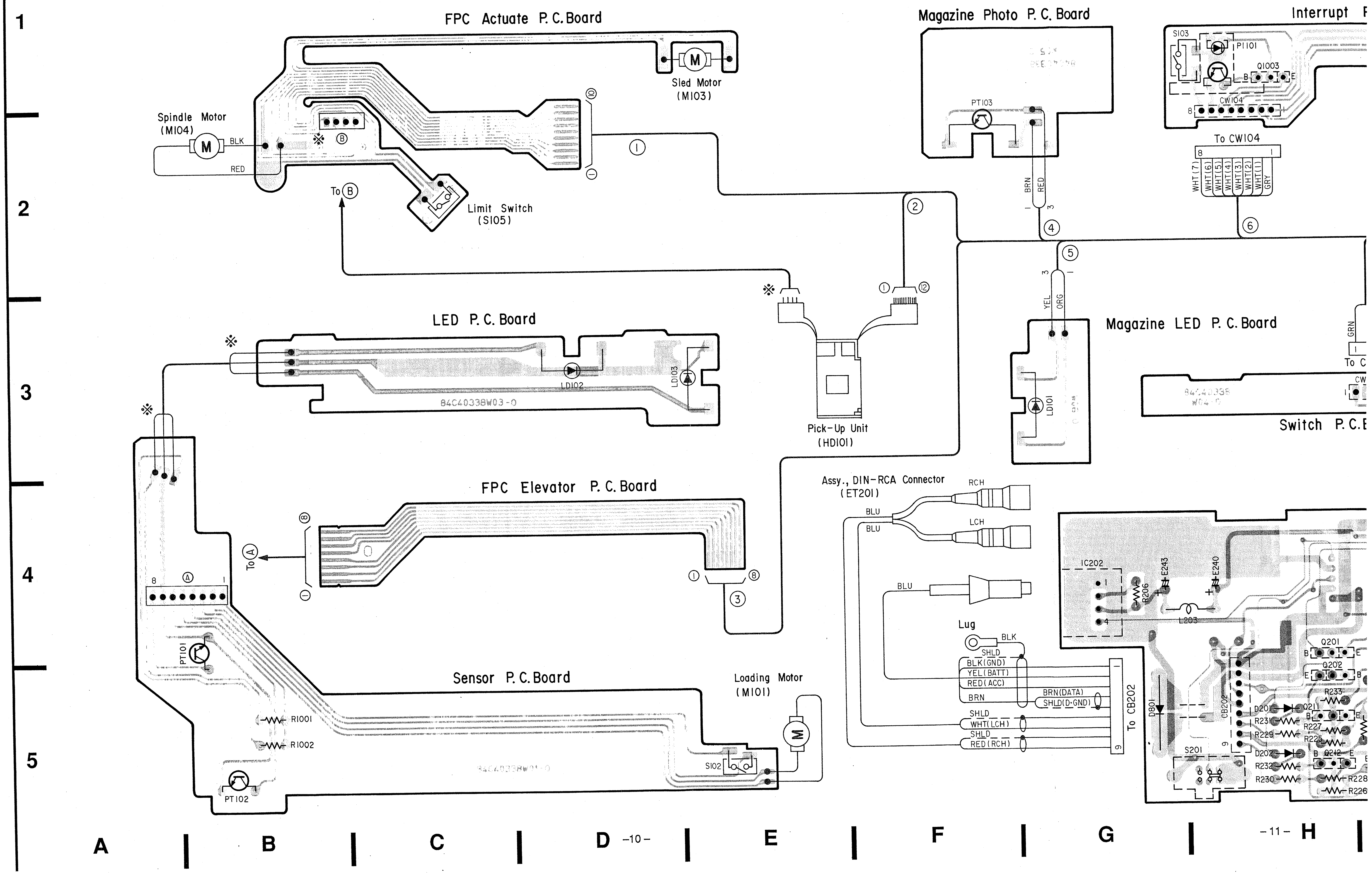
Main P.C. Board (Foil Side View)


To CB102
From FPC Actuate P.C.Board
To CB101
From Pick-up Unit (HD101)
IC101
IC103
IC104
IC109
IC501
IC502
IC504
IC505
IC506
IC701
IC702
BA801
D804
D802
D803
D501
D502
D503
D505
D506
D507
ZD501
ZD502
ZD503
L801
L802
L803
X501
VR101
VR102
VR103
Q101
Q102
Q103
Q110
Q111
Q112
Q113
Q114
Q115
Q116
Q501
Q502
Q503
Q504
Q505
Q506
Q507
Q508
Q509
Q510
Q511
Q512
Q513
Q801
Q802
Q803
Q804

Orange Color Pattern : Component Side Pattern
Blue Color Pattern : Foil Side Pattern

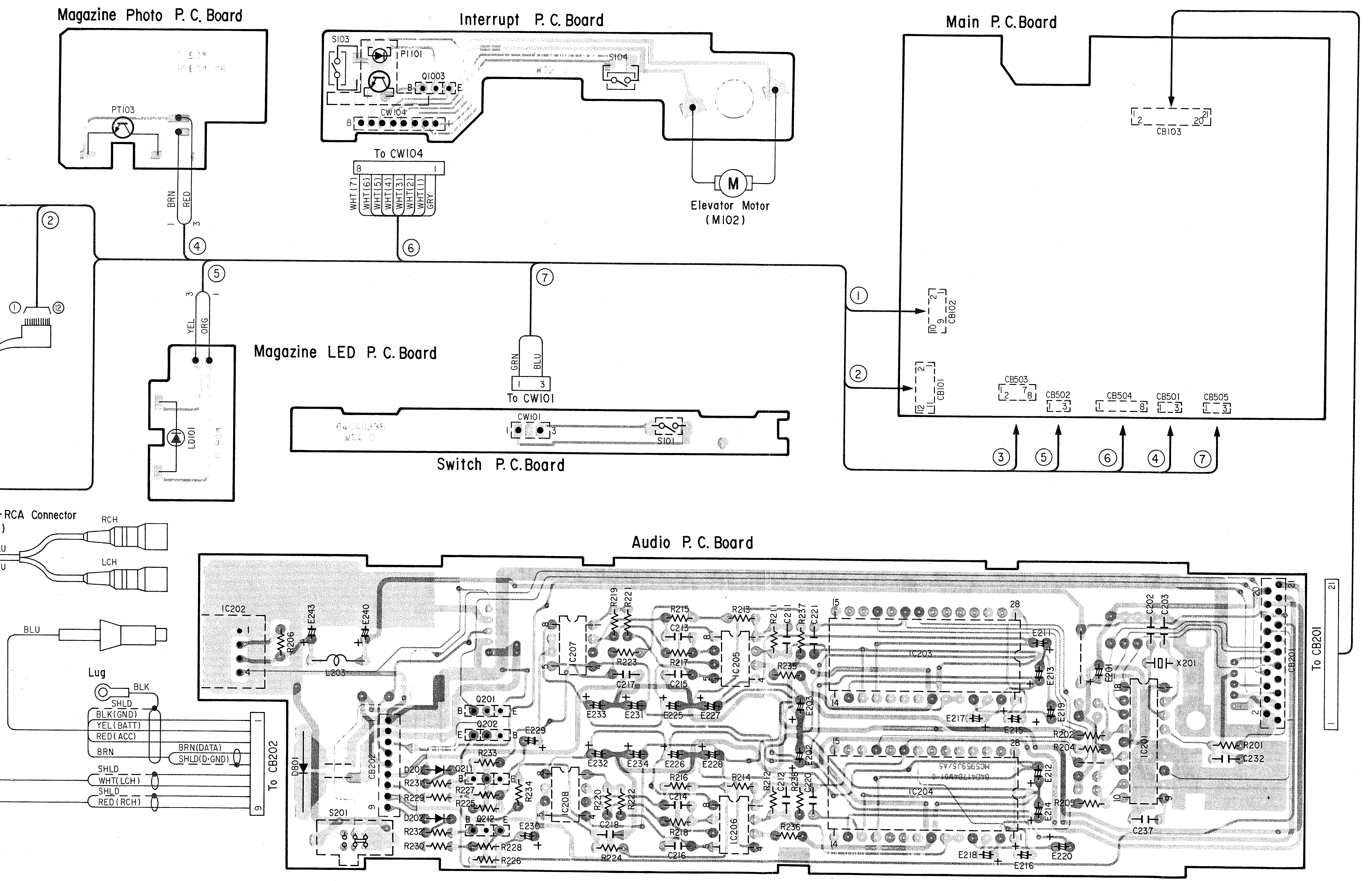
Parts Layout on P.C. Boards and Wiring Diagram (2/2)

All P.C. Boards viewed from soldered side.

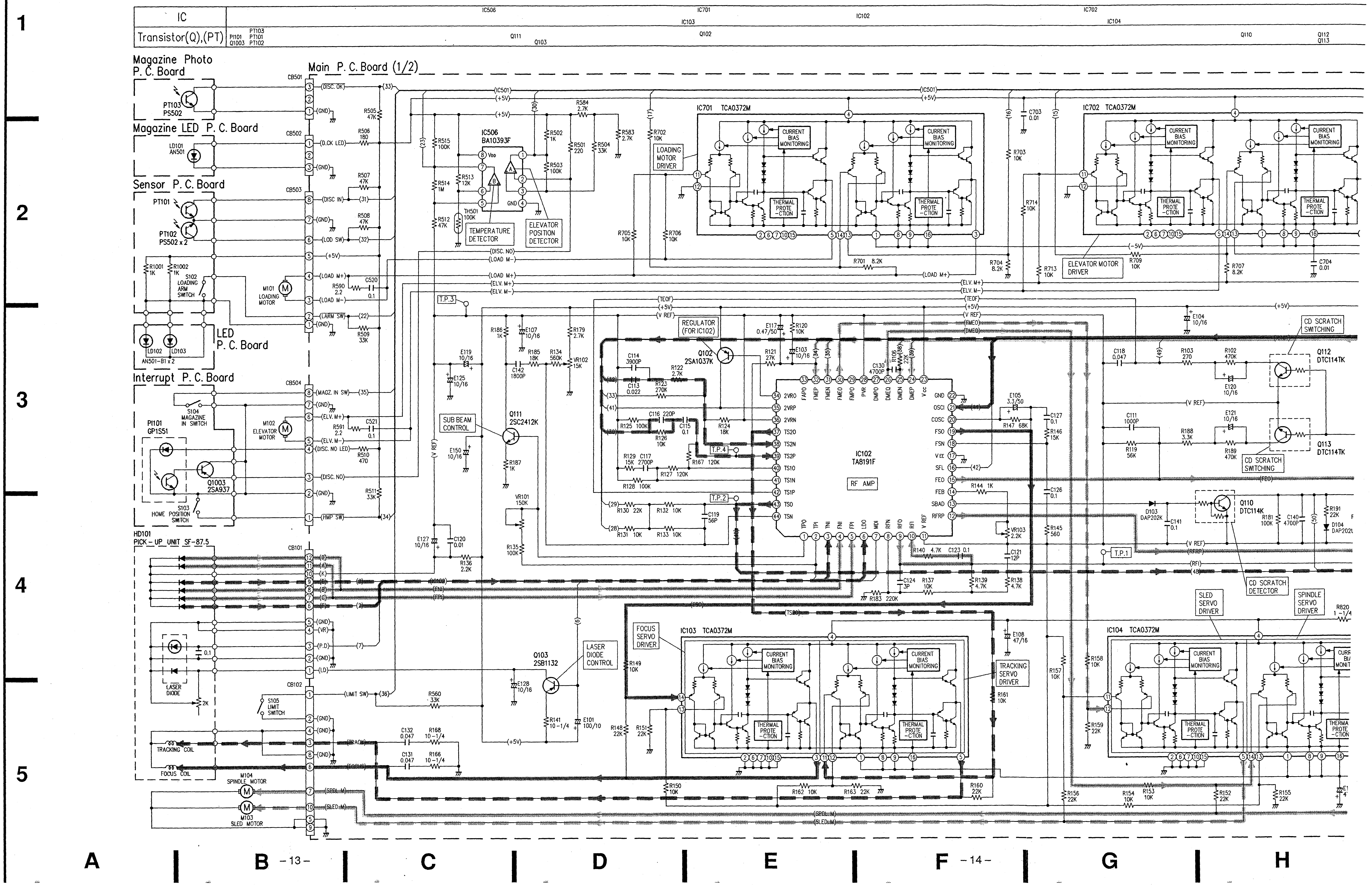

1
2
3
4
5
A
B
C
D
E
F
G
H
FPC Actuate P.C. Board
Sled Motor (M103)
Spindle Motor (M104)
BLK
RED
Ⓑ
※
⑩
①
To Ⓑ
Limit Switch (S105)
②
Magazine Photo P.C. Board
PT103
BRN
RED
1
3
④
Interrupt P
S103
PT101
Q1003
B
E
CW104
8
To CW104
8
1
WHT(7)
WHT(6)
WHT(5)
WHT(4)
WHT(3)
WHT(2)
WHT(1)
GRY
⑥
⑤
YEL
ORG
Magazine LED P.C. Board
LD101
GRN
To C
CW
Switch P.C.B
LED P.C. Board
LD102
LD103
84C40338W03-0
Pick-Up Unit (HD101)
⑫
FPC Elevator P.C. Board
To Ⓐ
⑧
③
Ⓐ
PT101
Sensor P.C. Board
R1001
R1002
PT102
S102
Loading Motor (M101)
Assy., DIN-RCA Connector (ET201)
RCH
LCH
BLU
Lug
BLK
SHLD
BLK(GND)
YEL(BATT)
RED(ACC)
BRN
BRN(DATA)
SHLD(D-GND)
WHT(LCH)
RED(RCH)
To CB202
9
IC202
R206
E243
E240
L203
Q201
Q202
D801
CB202
S201
D201
R231
R229
D202
R232
R230
Q211
R227
R225
R233
Q212
R228
R226

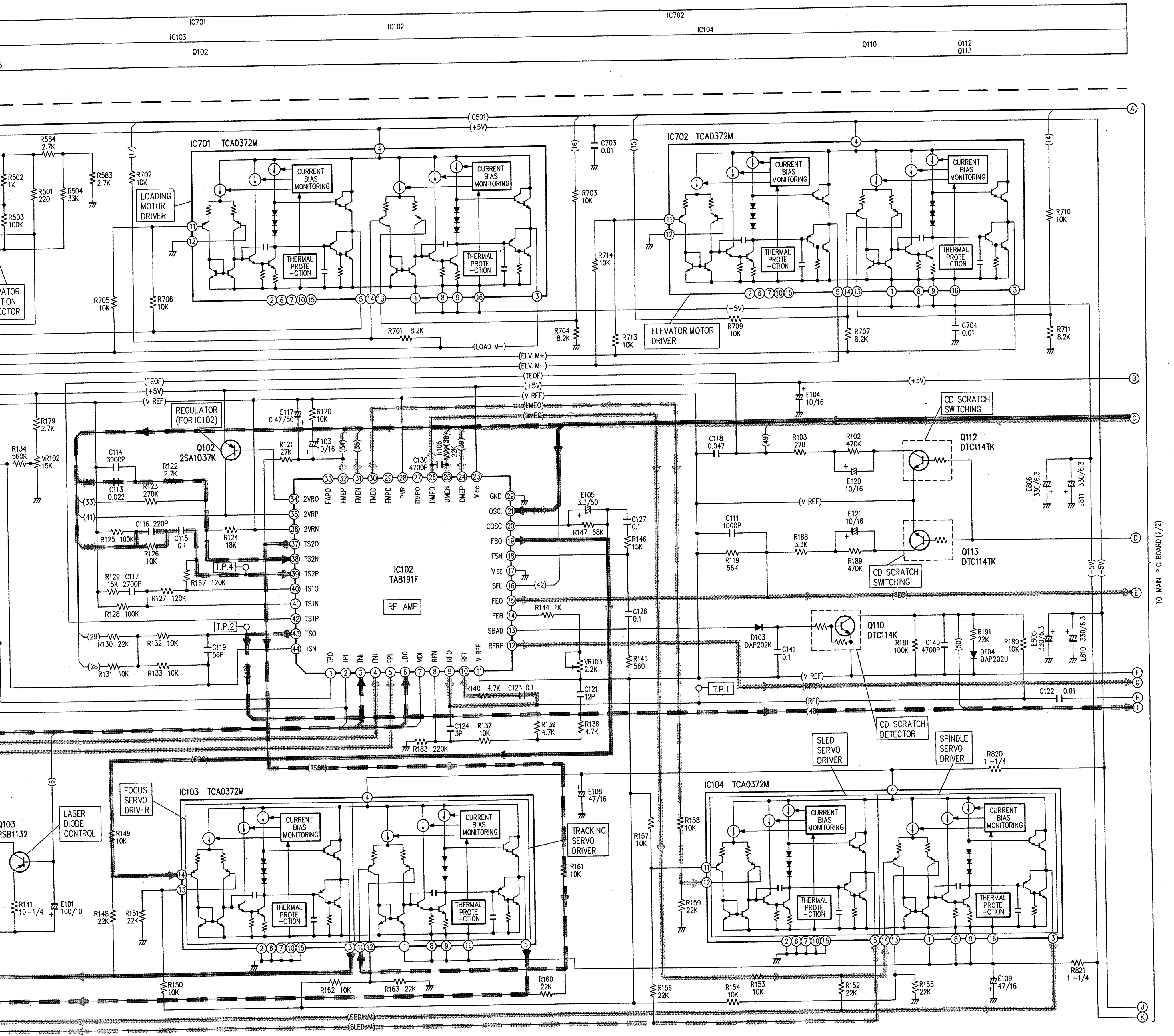
ved from soldered side.

Orange Color Pattern : Component Side Pattern
Blue Color Pattern : Foil Side Pattern


Magazine Photo P. C. Board
PT103
BRN
RED
Interrupt P. C. Board
S103
P1101
Q1003
S104
CW104
To CW104
WHT(7)
WHT(6)
WHT(5)
WHT(4)
WHT(3)
WHT(2)
WHT(1)
GRY
Elevator Motor
(M102)
M
Main P. C. Board
CB103
CB102
CB101
CB503
CB502
CB504
CB501
CB505
YEL
ORG
Magazine LED P. C. Board
LD101
GRN
BLU
To CW101
CW101
S101
Switch P. C. Board
-RCA Connector
RCH
LCH
BLU
Lug
BLK
SHLD
BLK(GND)
YEL(BATT)
RED(ACC)
BRN
BRN(DATA)
SHLD(D-GND)
WHT(LCH)
RED(RCH)
To CB202
Audio P. C. Board
IC202
IC203
IC204
IC205
IC206
IC207
IC208
IC201
CB202
CB201
D801
S201
Q201
Q202
Q211
Q212
X201
L203
To CB201
①
②
③
④
⑤
⑥
⑦
⑫
F
G
H
I
J
K
L
M

Schematic Diagram (1/3)


IC
Transistor(Q),(PT)
IC506
IC701
IC103
IC102
IC702
IC104
PI101 Q1003
PT103 PT101 PT102
Q111
Q103
Q102
Q110
Q112 Q113
Magazine Photo P. C. Board
PT103 PS502
Magazine LED P. C. Board
LD101 AN501
Sensor P. C. Board
PT101
PT102 PS502 x 2
R1001 1K
R1002 1K
S102 LOADING ARM SWITCH
M101 LOADING MOTOR
LED P. C. Board
LD102 LD103
AN501-B1 x 2
Interrupt P. C. Board
PI101 GP1S51
S104 MAGAZINE IN SWITCH
Q1003 2SA937
S103 HOME POSITION SWITCH
M102 ELEVATOR MOTOR
HD101 PICK-UP UNIT SF-87.5
LASER DIODE
TRACKING COIL
FOCUS COIL
M104 SPINDLE MOTOR
M103 SLED MOTOR
S105 LIMIT SWITCH
Main P. C. Board (1/2)
CB501
CB502
CB503
CB504
CB101
CB102
(DISC. OK)
(D.CK LED)
(DISC IN)
(LOD SW)
(+5V)
(LOAD M+)
(LOAD M-)
(LARM SW)
(GND)
(MAGZ. IN SW)
(ELV. M+)
(ELV. M-)
(DISC. NO LED)
(DISC. NO)
(HMP SW)
(VR)
(P.D)
(LD)
(LIMIT SW)
(TRACK)
(FOCUS)
(SPDL M)
(SLED M)
IC506 BA10393F
TEMPERATURE DETECTOR
ELEVATOR POSITION DETECTOR
TH501 100K
IC701 TCA0372M
LOADING MOTOR DRIVER
CURRENT BIAS MONITORING
THERMAL PROTE -CTION
IC702 TCA0372M
ELEVATOR MOTOR DRIVER
T.P.3
REGULATOR (FOR IC102)
Q102 2SA1037K
SUB BEAM CONTROL
Q111 2SC2412K
IC102 TA8191F
RF AMP
T.P.4
T.P.2
T.P.1
CD SCRATCH SWITCHING
Q112 DTC114TK
Q113 DTC114TK
Q110 DTC114K
CD SCRATCH DETECTOR
D103 DAP202K
D104 DAP202
Q103 2SB1132
LASER DIODE CONTROL
FOCUS SERVO DRIVER
IC103 TCA0372M
TRACKING SERVO DRIVER
SLED SERVO DRIVER
SPINDLE SERVO DRIVER
IC104 TCA0372M
1
2
3
4
5
A
B
C
D
E
F
G
H


IC701
IC103
Q102
IC102
IC702
IC104
Q110
Q112
Q113
IC701 TCA0372M
LOADING MOTOR DRIVER
CURRENT BIAS MONITORING
THERMAL PROTE -CTION
IC702 TCA0372M
ELEVATOR MOTOR DRIVER
(LOAD M+)
(ELV. M+)
(ELV. M−)
(TEOF)
(+5V)
(V REF)
(FMEO)
(DMEO)
(IC501)
REGULATOR (FOR IC102)
Q102 2SA1037K
IC102 TA8191F
RF AMP
2VRO
2VRP
2VRN
TS2O
TS2N
TS2P
TS1O
TS1N
TS1P
TSO
TSN
FAPO
FMEP
FMEN
FMEO
FMPO
PVR
DMPO
DMEO
DMEN
DMEP
Vcc
GND
OSCI
COSC
FSO
FSN
VEE
SFL
FEO
FEB
SBAD
RFRP
TPO
TPI
TNI
FNI
FPI
LDO
MDI
RFO
RFN
V REF
T.P.1
T.P.2
T.P.4
CD SCRATCH SWITCHING
Q112 DTC114TK
Q113 DTC114TK
Q110 DTC114K
CD SCRATCH DETECTOR
D103 DAP202K
D104 DAP202U
TO MAIN P.C. BOARD (2/2)
FOCUS SERVO DRIVER
IC103 TCA0372M
TRACKING SERVO DRIVER
LASER DIODE CONTROL
Q103 2SB1132
SLED SERVO DRIVER
SPINDLE SERVO DRIVER
IC104 TCA0372M
(SPDL M)
(SLED M)
(TS20)
(FEO)
(RFI)
(RFRP)
(48)

IC102

1	1.8V	11	2.1V	21	2.5V	31	2.1V	41	2.1V
2	2.1V	12	2.3V	22	0V	32	2.1V	42	2.1V
3	2.1V	13	2.4V	23	5.1V	33	2.1V	43	2.1V
4	2.1V	14	2.1V	24	2.2V	34	4.5V	44	2.1V
5	2.1V	15	2.1V	25	2.2V	35	4.2V		
6	PS	16	5.1V	26	PS	36	2.1V		
7	PS	17	0V	27	PS	37	2.1V		
8	PS	18	2.1V	28	2.1V	38	2.1V		
9	PS	19	2.1V	29	PS	39	2.1V		
10	PS	20	2.1V	30	PS	40	2.1V		

IC103

1	−5V	9	−5V
2	0V	10	0V
3	PS	11	0V
4	5.1V	12	0V
5	PS	13	1.5V
6	0V	14	1.5V
7	0V	15	0V
8	−5V	16	0V

IC104

1	−5V	9	−5V
2	0V	10	0V
3	PS	11	1.5V
4	5.1V	12	PS
5	PS	13	0V
6	0V	14	1.5V
7	0V	15	0V
8	−5V	16	0.2V

IC506

1	0V
2	5.1V
3	1.6V
4	0V
5	2V
6	5V
7	0V
8	5.1V

IC701

1	0.2V	9	0.2V
2	0V	10	0V
3	0.7V	11	0.7V
4	1.3V	12	0V
5	0.7V	13	0V
6	0V	14	0.4V
7	0V	15	0V
8	0.2V	16	0.2V

IC702

1	−5V	9	0.2V
2	0V	10	0V
3	0.7V	11	0.7V
4	1.2V	12	0V
5	0.7V	13	0V
6	0V	14	0.4V
7	0V	15	0V
8	0.2V	16	0.2V

	E	C	B
Q102	5.1V	4.2V	4.5V
Q103	5.1V	0V	4.7V
Q110	2.1V	2.4V	2.2V
Q111	1.2V	1.2V	1.8V
Q112	2.1V	2.1V	0V
Q113	2.1V	2.1V	0V

(Measuring Conditions)

1.Power Supply Voltage : DC14V
2.Measuring Meter : Digital Multi Volt Meter
3.Measuring Point Reference : Between Ground
4.Measuring Conditions : Test Disc Play (A−BEX TCD−782 Track NO.2 1KHz)
Digital Output Switch (OFF)

▬ CD Signal Line (Digital)
▬ Focus Servo Signal Line
▬ ▬ Tracking Servo Signal Line
▬ Spindle Servo Signal Line
▬ ▬ Sled Servo Signal Line

NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1,000,000}$

Schematic Diagram (2/3)

IC	IC502 IC501 IC101 IC109 IC504 IC503 IC801 IC505
Transistor (Q)	Q101 Q116 Q114 Q115 Q509 Q510 Q512 Q503 Q501 Q804 Q502 Q513 Q803 Q505 Q506 Q507 Q511 Q802 Q801 Q508 Q504

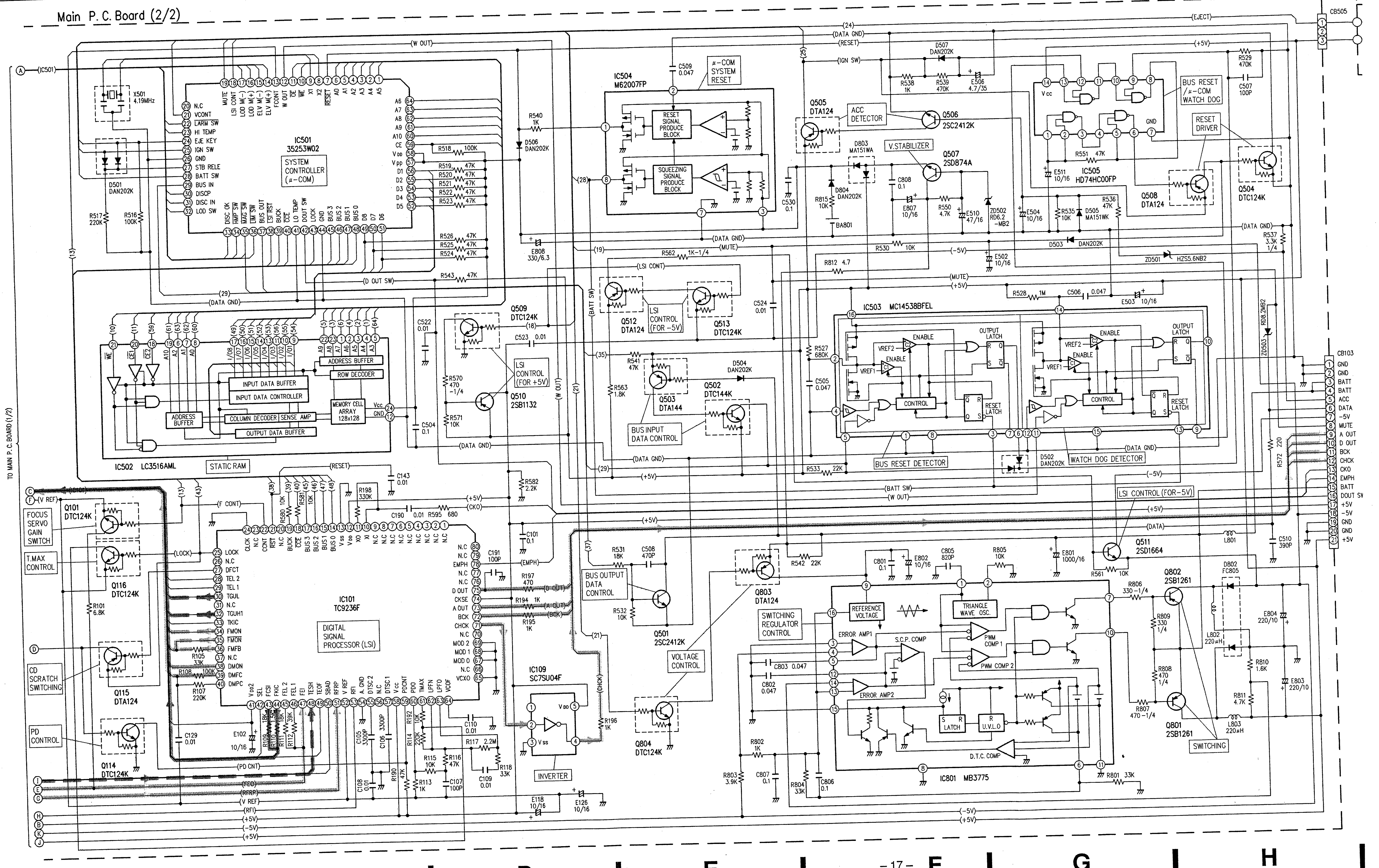
1

2

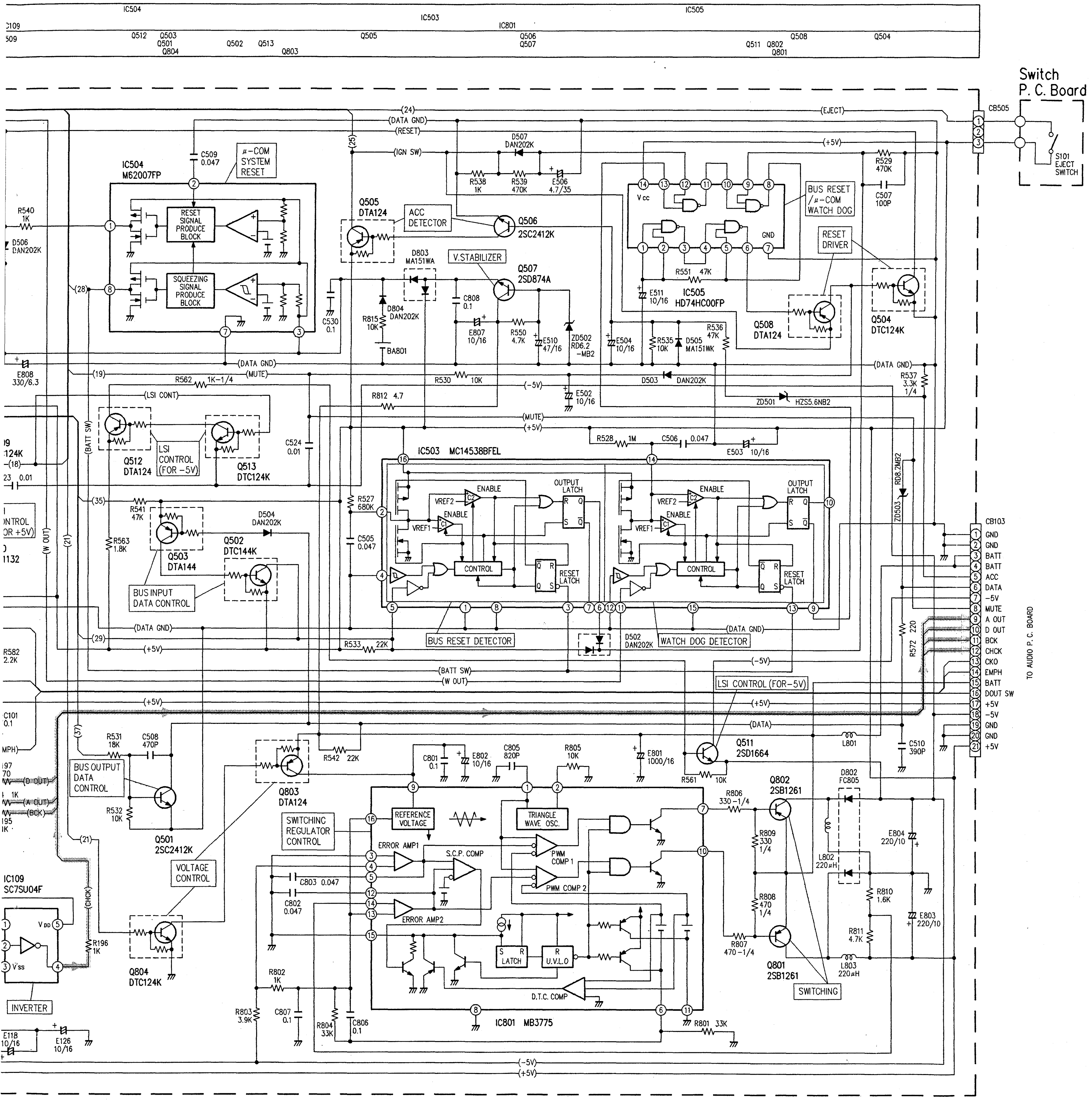
3

4

5


Main P. C. Board (2/2)
TO MAIN P.C. BOARD (1/2)
IC501 35253W02
SYSTEM CONTROLLER (μ-COM)
X501 4.19MHz
D501 DAN202K
R517 220K
R516 100K
N.C
VCONT
LARM SW
HI TEMP
EJE KEY
IGN SW
GND
STB RELE
BATT SW
BUS IN
DISCP
DISC IN
LOD SW
MUTE
LSI CONT
LOD M(-)
LOD M(+)
ELV M(-)
ELV M(+)
FCONT
W OUT
OE
WE
X1
X2
RESET
A0 A1 A2 A3 A4 A5
A6 A7 A8 A9 A10
CE
VDD
VPP
D1 D2 D3 D4 D5
DISC OK
HMP SW
MAG SW
LMT SW
BUS OUT
LSI RST
BUCK
CCE
LO TEMP
DOUT SW
LOCK
GND
BUS 3 BUS 2 BUS 1 BUS 0
D8 D7 D6
R518 100K
R519 47K
R520 47K
R521 47K
R522 47K
R523 47K
R526 47K
R525 47K
R524 47K
R543 47K
(W OUT)
(D OUT SW)
(DATA GND)
IC502 LC3516AML
STATIC RAM
ADDRESS BUFFER
ROW DECODER
INPUT DATA BUFFER
INPUT DATA CONTROLLER
MEMORY CELL ARRAY 128x128
COLUMN DECODER
SENSE AMP
OUTPUT DATA BUFFER
I/O8 I/O7 I/O6 I/O5 I/O4 I/O3 I/O2 I/O1
Vcc GND
C522 0.01
C504 0.1
Q509 DTC124K
Q510 2SB1132
R570 470 -1/4
R571 10K
C523 0.01
LSI CONTROL (FOR +5V)
R540 1K
D506 DAN202K
E808 330/6.3
IC504 M62007FP
C509 0.047
μ-COM SYSTEM RESET
RESET SIGNAL PRODUCE BLOCK
SQUEEZING SIGNAL PRODUCE BLOCK
C530 0.1
(DATA GND)
(MUTE)
R562 1K-1/4
(LSI CONT)
(BATT SW)
Q512 DTA124
LSI CONTROL (FOR -5V)
Q513 DTC124K
C524 0.01
R541 47K
R563 1.8K
Q503 DTA144
BUS INPUT DATA CONTROL
D504 DAN202K
Q502 DTC144K
(RESET)
C143 0.01
R198 330K
R582 2.2K
(+5V)
(CKO)
C190 0.01
R595 680
C101 0.1
C191 100P
(EMPH)
R197 470
(D OUT)
R194 1K
(A OUT)
(BCK)
R195 1K
Q101 DTC124K
FOCUS SERVO GAIN SWITCH
T.MAX CONTROL
Q116 DTC124K
R101 6.8K
CD SCRATCH SWITCHING
Q115 DTA124
PD CONTROL
Q114 DTC124K
(V REF)
(IC501)
(F CONT)
(LOCK)
IC101 TC9236F
DIGITAL SIGNAL PROCESSOR (LSI)
LOCK N.C DFCT TEL 2 TEL 1 TGUL N.C TGUH1 TKIC FMON FMON FMFB N.C DMON DMFC DMPC
CLCK N.C CONT RST BUCK CCE BUS 3 BUS 2 BUS 1 BUS 0 VDD XI XO
N.C N.C EMPH N.C N.C D OUT CKSE A OUT BCK CHCK N.C MOD 2 MOD 1 MOD 0 N.C VCXO
VDD2 SEL FCSI TKIC FEL 2 FEL 1 FEI TESH TEOF SBAD RFRP V REF RFI A.GND DTSC 2 N.C DTSC1 Vcc PDCNT PDO TMAX LPFN LPFO VCOF
R105 33K
R108 100K
R107 220K
C129 0.01
E102 10/16
R109 R110 R111 R112 39K
C105 3300P
C106 3300P
R190 47K
R114 220K
R192 10K
R115 10K
R116 47K
R113 1K
C107 100P
C108 0.01
C110 0.01
R117 2.2M
R118 33K
C109 0.01
(PD CNT)
(FEO)
(RFRP)
(RFI)
(+5V)
(-5V)
IC109 SC7SU04F
VDD
VSS
INVERTER
E118 10/16
E126 10/16
(CHCK)
R196 1K
Q804 DTC124K
VOLTAGE CONTROL
R531 18K
C508 470P
BUS OUTPUT DATA CONTROL
R532 10K
Q501 2SC2412K
Q803 DTA124
R542 22K
Q505 DTA124
ACC DETECTOR
Q506 2SC2412K
D803 MA151WA
V.STABILIZER
Q507 2SD874A
R815 10K
D804 DAN202K
BA801
C808 0.1
E807 10/16
R550 4.7K
E510 47/16
ZD502 RD6.2-MB2
R530 10K
R812 4.7
E502 10/16
(-5V)
(MUTE)
D507 DAN202K
R538 1K
R539 470K
E506 4.7/35
(IGN SW)
(EJECT)
(24)
(25)
IC505 HD74HC00FP
Vcc
GND
E511 10/16
R551 47K
E504 10/16
R535 10K
D505 MA151WK
R536 47K
BUS RESET / μ-COM WATCH DOG
RESET DRIVER
R529 470K
C507 100P
Q508 DTA124
Q504 DTC124K
D503 DAN202K
ZD501 HZS5.6NB2
R537 3.3K 1/4
R528 1M
C506 0.047
E503 10/16
IC503 MC14538BFEL
ENABLE
VREF2
VREF1
OUTPUT LATCH
CONTROL
RESET LATCH
R527 680K
C505 0.047
BUS RESET DETECTOR
WATCH DOG DETECTOR
D502 DAN202K
R533 22K
ZD503 RD8.2MB2
R572 220
LSI CONTROL (FOR-5V)
Q511 2SD1664
R561 10K
E801 1000/16
(DATA)
(BATT SW)
(W OUT)
L801
C510 390P
IC801 MB3775
SWITCHING REGULATOR CONTROL
REFERENCE VOLTAGE
TRIANGLE WAVE OSC.
ERROR AMP1
ERROR AMP2
S.C.P. COMP
PWM COMP 1
PWM COMP 2
LATCH
U.V.L.O
D.T.C. COMP
C801 0.1
E802 10/16
C805 820P
R805 10K
C803 0.047
C802 0.047
R802 1K
R803 3.9K
C807 0.1
R804 33K
C806 0.1
R801 33K
R806 330 -1/4
Q802 2SB1261
R809 330 1/4
R808 470 1/4
R807 470 -1/4
Q801 2SB1261
D802 FC805
L802 220μH
L803 220μH
R810 1.6K
R811 4.7K
E804 220/10
E803 220/10
SWITCHING
CB505
SP L
CB103
GND GND BATT BATT ACC DATA -5V MUTE A OUT D OUT BCK CHCK CKO EMPH BATT DOUT SW +5V -5V GND GND +5V
A B C D E F G H I J

A B C D E F G H


IC504
IC503
IC801
IC505
Q512 Q503 Q501 Q804
Q502 Q513 Q803
Q505
Q506 Q507
Q511 Q802 Q801
Q508
Q504
Switch P. C. Board
CB505
S101 EJECT SWITCH
(EJECT)
(DATA GND)
(RESET)
(+5V)
(IGN SW)
C509 0.047
μ-COM SYSTEM RESET
IC504 M62007FP
RESET SIGNAL PRODUCE BLOCK
SQUEEZING SIGNAL PRODUCE BLOCK
R540 1K
D506 DAN202K
E808 330/6.3
C530 0.1
Q505 DTA124
ACC DETECTOR
Q506 2SC2412K
D507 DAN202K
R538 1K
R539 470K
E506 4.7/35
D803 MA151WA
V.STABILIZER
Q507 2SD874A
C808 0.1
R815 10K
D804 DAN202K
BA801
E807 10/16
R550 4.7K
E510 47/16
ZD502 RD6.2 -MB2
E504 10/16
Vcc
GND
BUS RESET / μ-COM WATCH DOG
RESET DRIVER
R551 47K
E511 10/16
IC505 HD74HC00FP
R535 10K
D505 MA151WK
R536 47K
Q508 DTA124
Q504 DTC124K
R529 470K
C507 100P
(DATA GND)
R537 3.3K 1/4
(MUTE)
R562 1K-1/4
R530 10K
(-5V)
D503 DAN202K
E502 10/16
ZD501 HZS5.6NB2
(LSI CONT)
R812 4.7
(MUTE)
(+5V)
R528 1M
C506 0.047
E503 10/16
(BATT SW)
Q512 DTA124
LSI CONTROL (FOR -5V)
Q513 DTC124K
C524 0.01
IC503 MC14538BFEL
ENABLE
OUTPUT LATCH
VREF2
VREF1
CONTROL
RESET LATCH
R527 680K
C505 0.047
ZD503 RD8.2MB2
R541 47K
R563 1.8K
Q503 DTA144
D504 DAN202K
Q502 DTC144K
BUS INPUT DATA CONTROL
(W OUT)
(DATA GND)
(+5V)
R533 22K
BUS RESET DETECTOR
D502 DAN202K
WATCH DOG DETECTOR
(-5V)
R572 220
(BATT SW)
(W OUT)
LSI CONTROL (FOR-5V)
(+5V)
(DATA)
CB103
GND
GND
BATT
BATT
ACC
DATA
-5V
MUTE
A OUT
D OUT
BCK
CHCK
CKO
EMPH
BATT
DOUT SW
+5V
-5V
GND
GND
+5V
TO AUDIO P.C. BOARD
R531 18K
C508 470P
BUS OUTPUT DATA CONTROL
R532 10K
Q501 2SC2412K
Q803 DTA124
R542 22K
C801 0.1
E802 10/16
C805 820P
R805 10K
E801 1000/16
Q511 2SD1664
R561 10K
L801
C510 390P
D802 FC805
Q802 2SB1261
R806 330-1/4
R809 330 1/4
L802 220μH
E804 220/10
SWITCHING REGULATOR CONTROL
REFERENCE VOLTAGE
TRIANGLE WAVE OSC.
ERROR AMP1
S.C.P. COMP
PWM COMP 1
PWM COMP 2
ERROR AMP2
VOLTAGE CONTROL
C803 0.047
C802 0.047
R808 470 1/4
R810 1.6K
E803 220/10
R811 4.7K
R807 470-1/4
Q801 2SB1261
L803 220μH
SWITCHING
IC109 SC7SU04F
INVERTER
R196 1K
Q804 DTC124K
S R LATCH
R U.V.L.O
D.T.C. COMP
R802 1K
R803 3.9K
C807 0.1
R804 33K
C806 0.1
IC801 MB3775
R801 33K
E118 10/16
E126 10/16
(-5V)
(+5V)
R582 2.2K
C101 0.1
(CHCK)
(D OUT)
(A OUT)
(BCK)

IC101

1	5.1V	17	PS	33	2V	49	2.1V	65	0V
2	5.1V	18	PS	34	2.1V	50	2.4V	66	0V
3	2.4V	19	PS	35	2.1V	51	2.3V	67	0V
4	1.7V	20	1.7V	36	2.1V	52	2.1V	68	0V
5	PS	21	5V	37	5.1V	53	2.5V	69	0V
6	2.4V	22	0V	38	2.1V	54	0V	70	2.6V
7	0.1V	23	0.1V	39	2.1V	55	2.5V	71	2.6V
8	PS	24	0V	40	2.4V	56	2.5V	72	2.5V
9	5.1V	25	5.1V	41	4.2V	57	2.5V	73	0V
10	2.4V	26	5.1V	42	5.1V	58	5.1V	74	5.1V
11	2.4V	27	5.1V	43	2.5V	59	5.1V	75	0V
12	5.1V	28	2.1V	44	2.5V	60	2V	76	5.1V
13	0V	29	2.1V	45	2.1V	61	2.1V	77	5.1V
14	PS	30	2.1V	46	2.1V	62	2.1V	78	0V
15	PS	31	0.3V	47	2.1V	63	2.3V	79	5.1V
16	PS	32	2.1V	48	2.1V	64	1.9V	80	2.2V

IC109

1	0V
2	2.5V
3	0V
4	2.6V
5	5.1V

IC501

1	0V	17	0V	33	0.1V	49	5V
2	0V	18	5V	34	0V	50	5V
3	0V	19	0V	35	0V	51	5V
4	0V	20	0V	36	5.1V	52	5V
5	0V	21	5V	37	PS	53	5V
6	5V	22	0V	38	5V	54	5V
7	5V	23	0V	39	PS	55	5V
8	2.7V	24	0V	40	PS	56	5V
9	2.6V	25	5.2V	41	0V	57	PS
10	5V	26	0V	42	0V	58	5V
11	5V	27	4.8V	43	5.1V	59	0V
12	PS	28	5V	44	0V	60	0V
13	0V	29	PS	45	PS	61	0V
14	0V	30	0V	46	PS	62	0V
15	0V	31	5V	47	PS	63	0V
16	0V	32	0.14V	48	PS	64	0V

IC504

1	5V
2	5V
3	5V
4	0V
5	0V
6	0V
7	0V
8	5V

IC502

1	5V	9	5V	17	5V
2	0V	10	5V	18	0V
3	0V	11	5V	19	0V
4	0V	12	0V	20	5V
5	0V	13	5V	21	5V
6	0V	14	5V	22	5V
7	0V	15	5V	23	0V
8	0V	16	5V	24	5V

IC503

1	0V	9	0V
2	5V	10	0V
3	5V	11	PS
4	0V	12	0V
5	5V	13	5V
6	5V	14	5V
7	5V	15	0V
8	0V	16	5V

IC505

1	0V	8	0V
2	0V	9	PS
3	5.2V	10	5.2V
4	5.2V	11	5.2V
5	0V	12	5V
6	5.2V	13	0V
7	0V	14	5.2V

IC801

1	5V	9	5V
2	0V	10	PS
3	0V	11	5V
4	0V	12	0V
5	0V	13	1.3V
6	0V	14	1.3V
7	PS	15	0V
8	0V	16	1.3V

	E	C	B
Q101	2.1V	2.1V	0V
Q114	0V	PS	PS
Q115	5.1V	0V	5.1V
Q116	2.1V	2.1V	4.9V
Q501	0V	PS	PS
Q502	0V	PS	PS
Q503	5.2V	PS	PS
Q504	0V	5V	0V
Q505	5.2V	5.1V	0V
Q506	0V	0V	0.6V
Q507	5.8V	13.1V	0V
Q508	5.2V	0V	5.2V
Q509	0V	0.1V	5V
Q510	5.2V	5.1V	4.4V
Q511	-5V	-4.9V	-4.3V
Q512	1.4V	-2.3V	0V
Q513	0V	0V	5V
Q801	13.7V	5.3V	13.3V
Q802	13.7V	0.1V	13.4V
Q803	13.6V	13.6V	0V
Q804	0V	0V	5V

(Measuring Conditions)

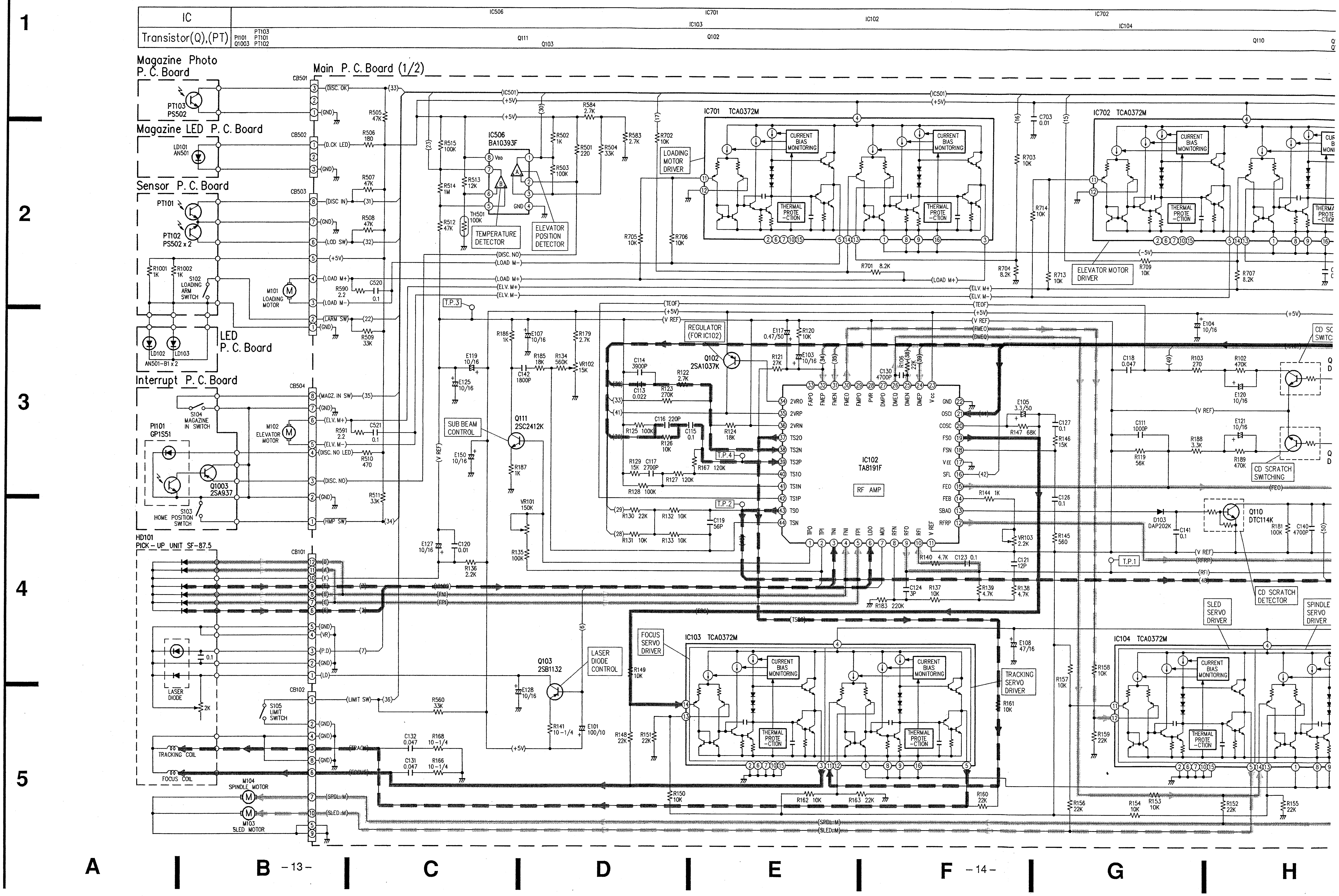
1.Power Supply Voltage :DC14V
2.Measuring Meter :Digital Multi Volt Meter
3.Measuring Point Reference :Between Ground
4.Measuring Conditions :Test Disc Play (A-BEX TCD-782
Track NO.2 1KHz)
Digital Output Switch (OFF)

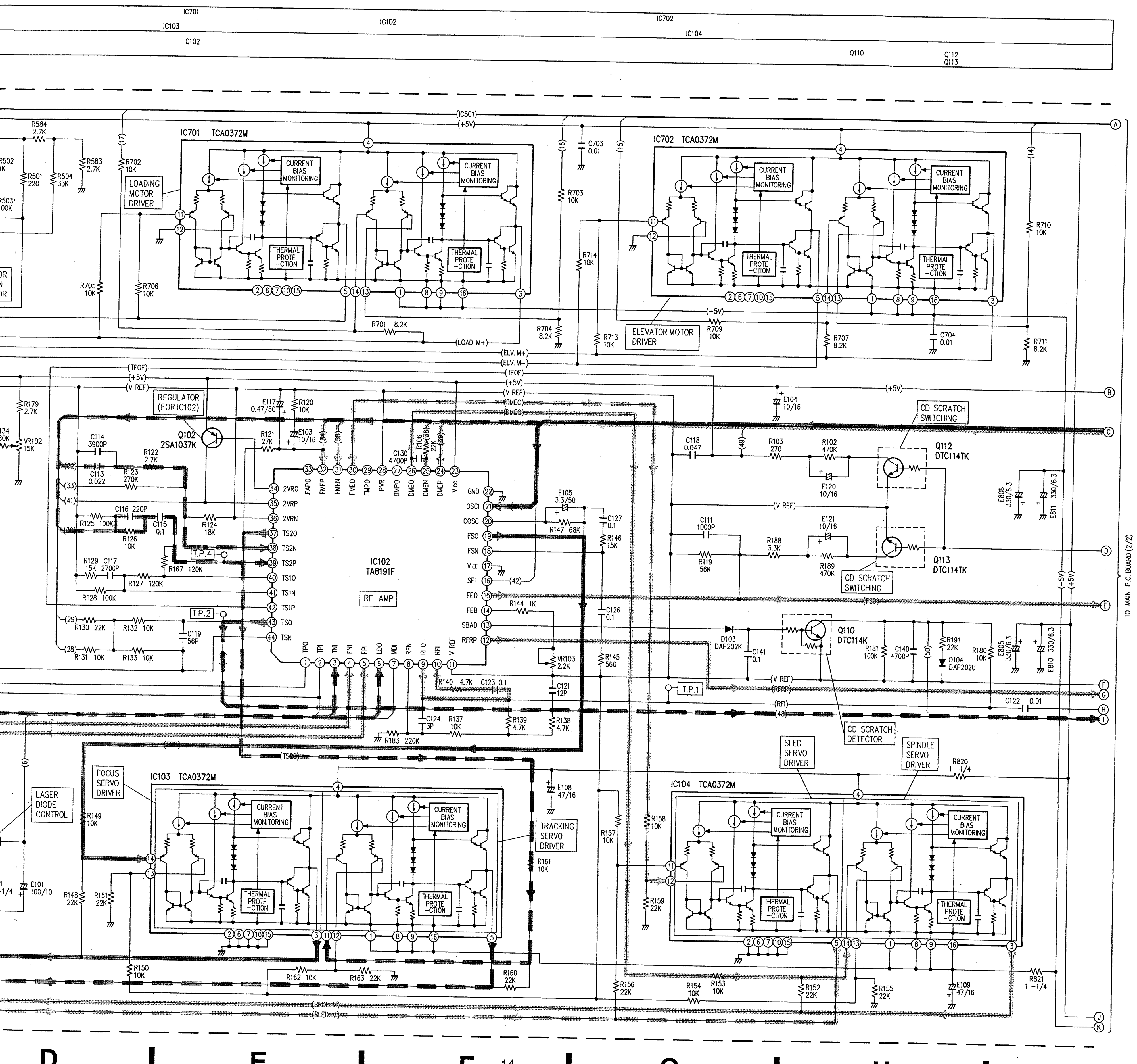
▨ CD Signal Line (Digital)
▬ Focus Servo Signal Line
▬ ▬ Tracking Servo Signal Line
▨ Spindle Servo Signal Line
▨ ▨ Sled Servo Signal Line

NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1,000,000}$

Schematic Diagram (1/3)


1
2
3
4
5
A
B
C
D
E
F
G
H
IC
Transistor(Q),(PT)
IC506
IC701
IC103
IC102
IC702
IC104
PI101 PT103 PT101
Q1003 PT102
Q111
Q103
Q102
Q110
Magazine Photo P. C. Board
PT103 PS502
Main P. C. Board (1/2)
CB501
Magazine LED P. C. Board
LD101 AN501
CB502
Sensor P. C. Board
PT101
PT102 PS502 x 2
CB503
R1001 1K
R1002 1K
S102 LOADING ARM SWITCH
M101 LOADING MOTOR
LED P. C. Board
LD102 LD103
AN501-B1 x 2
Interrupt P. C. Board
CB504
S104 MAGAZINE IN SWITCH
PI101 GP1S51
Q1003 2SA937
S103 HOME POSITION SWITCH
M102 ELEVATOR MOTOR
HD101 PICK-UP UNIT SF-87.5
CB101
LASER DIODE
CB102
S105 LIMIT SWITCH
TRACKING COIL
FOCUS COIL
M104 SPINDLE MOTOR
M103 SLED MOTOR
IC506 BA10393F
TH501 100K
TEMPERATURE DETECTOR
ELEVATOR POSITION DETECTOR
IC701 TCA0372M
LOADING MOTOR DRIVER
CURRENT BIAS MONITORING
THERMAL PROTE -CTION
IC702 TCA0372M
ELEVATOR MOTOR DRIVER
T.P.3
REGULATOR (FOR IC102)
Q102 2SA1037K
SUB BEAM CONTROL
Q111 2SC2412K
T.P.4
T.P.2
IC102 TA8191F
RF AMP
VR101 150K
VR102 15K
VR103 2.2K
T.P.1
CD SCRATCH SWITCHING
CD SCRATCH DETECTOR
D103 DAP202K
Q110 DTC114K
Q103 2SB1132
LASER DIODE CONTROL
FOCUS SERVO DRIVER
IC103 TCA0372M
TRACKING SERVO DRIVER
SLED SERVO DRIVER
SPINDLE SERVO DRIVER
IC104 TCA0372M
(DISC. OK)
(D.CK LED)
(DISC IN)
(LOD SW)
(+5V)
(LOAD M+)
(LOAD M-)
(LARM SW)
(MACZ. IN SW)
(ELV. M+)
(ELV. M-)
(DISC. NO LED)
(DISC. NO)
(HMP SW)
(GND)
(VR)
(P.D)
(LD)
(LIMIT SW)
(TRACK)
(FOCUS)
(SPDL.M)
(SLED.M)
(IC501)
(TEOF)
(V REF)
(FMEO)
(DMEO)
(FEO)
(RFRP)
(RFI)
(TS20)


IC701
IC103
Q102
IC102
IC702
IC104
Q110
Q112
Q113
IC701 TCA0372M
IC702 TCA0372M
CURRENT BIAS MONITORING
THERMAL PROTE -CTION
LOADING MOTOR DRIVER
ELEVATOR MOTOR DRIVER
(IC501)
(+5V)
(LOAD M+)
(ELV. M+)
(ELV. M−)
(TEOF)
(V REF)
(FMEO)
(DMEQ)
REGULATOR (FOR IC102)
Q102 2SA1037K
IC102 TA8191F
RF AMP
2VRO
2VRP
2VRN
TS2O
TS2N
TS2P
TS1O
TS1N
TS1P
TSO
TSN
GND
OSCI
COSC
FSO
FSN
VEE
SFL
FEO
FEB
SBAD
RFRP
T.P.4
T.P.2
T.P.1
CD SCRATCH SWITCHING
Q112 DTC114TK
Q113 DTC114TK
Q110 DTC114K
CD SCRATCH DETECTOR
D103 DAP202K
D104 DAP202U
(FEO)
(RFRP)
(RFI)
(48)
(TS20)
(ESO)
FOCUS SERVO DRIVER
LASER DIODE CONTROL
IC103 TCA0372M
TRACKING SERVO DRIVER
SLED SERVO DRIVER
SPINDLE SERVO DRIVER
IC104 TCA0372M
(SPDL.M)
(SLED.M)
TO MAIN P.C. BOARD (2/2)
(−5V)
(+5V)
A
B
C
D
E
F
G
H
I
J
K

IC102

1	1.8V	11	2.1V	21	2.5V	31	2.1V	41	2.1V
2	2.1V	12	2.3V	22	0V	32	2.1V	42	2.1V
3	2.1V	13	2.4V	23	5.1V	33	2.1V	43	2.1V
4	2.1V	14	2.1V	24	2.2V	34	4.5V	44	2.1V
5	2.1V	15	2.1V	25	2.2V	35	4.2V		
6	PS	16	5.1V	26	PS	36	2.1V		
7	PS	17	0V	27	PS	37	2.1V		
8	PS	18	2.1V	28	2.1V	38	2.1V		
9	PS	19	2.1V	29	PS	39	2.1V		
10	PS	20	2.1V	30	PS	40	2.1V		

IC103

1	−5V	9	−5V
2	0V	10	0V
3	PS	11	0V
4	5.1V	12	0V
5	PS	13	1.5V
6	0V	14	1.5V
7	0V	15	0V
8	−5V	16	0V

IC104

1	−5V	9	−5V
2	0V	10	0V
3	PS	11	1.5V
4	5.1V	12	PS
5	PS	13	0V
6	0V	14	1.5V
7	0V	15	0V
8	−5V	16	0.2V

IC506

1	0V
2	5.1V
3	1.6V
4	0V
5	2V
6	5V
7	0V
8	5.1V

IC701

1	0.2V	9	0.2V
2	0V	10	0V
3	0.7V	11	0.7V
4	1.3V	12	0V
5	0.7V	13	0V
6	0V	14	0.4V
7	0V	15	0V
8	0.2V	16	0.2V

IC702

1	−5V	9	0.2V
2	0V	10	0V
3	0.7V	11	0.7V
4	1.2V	12	0V
5	0.7V	13	0V
6	0V	14	0.4V
7	0V	15	0V
8	0.2V	16	0.2V

	E	C	B
Q102	5.1V	4.2V	4.5V
Q103	5.1V	0V	4.7V
Q110	2.1V	2.4V	2.2V
Q111	1.2V	1.2V	1.8V
Q112	2.1V	2.1V	0V
Q113	2.1V	2.1V	0V

(Measuring Conditions)

1.Power Supply Voltage :DC14V
2.Measuring Meter :Digital Multi Volt Meter
3.Measuring Point Reference :Between Ground
4.Measuring Conditions :Test Disc Play (A-BEX TCD-782 Track NO.2 1KHz)
Digital Output Switch (OFF)

▨ CD Signal Line (Digital)
▬ Focus Servo Signal Line
▬ ▬ Tracking Servo Signal Line
▨ Spindle Servo Signal Line
▨ ▨ Sled Servo Signal Line

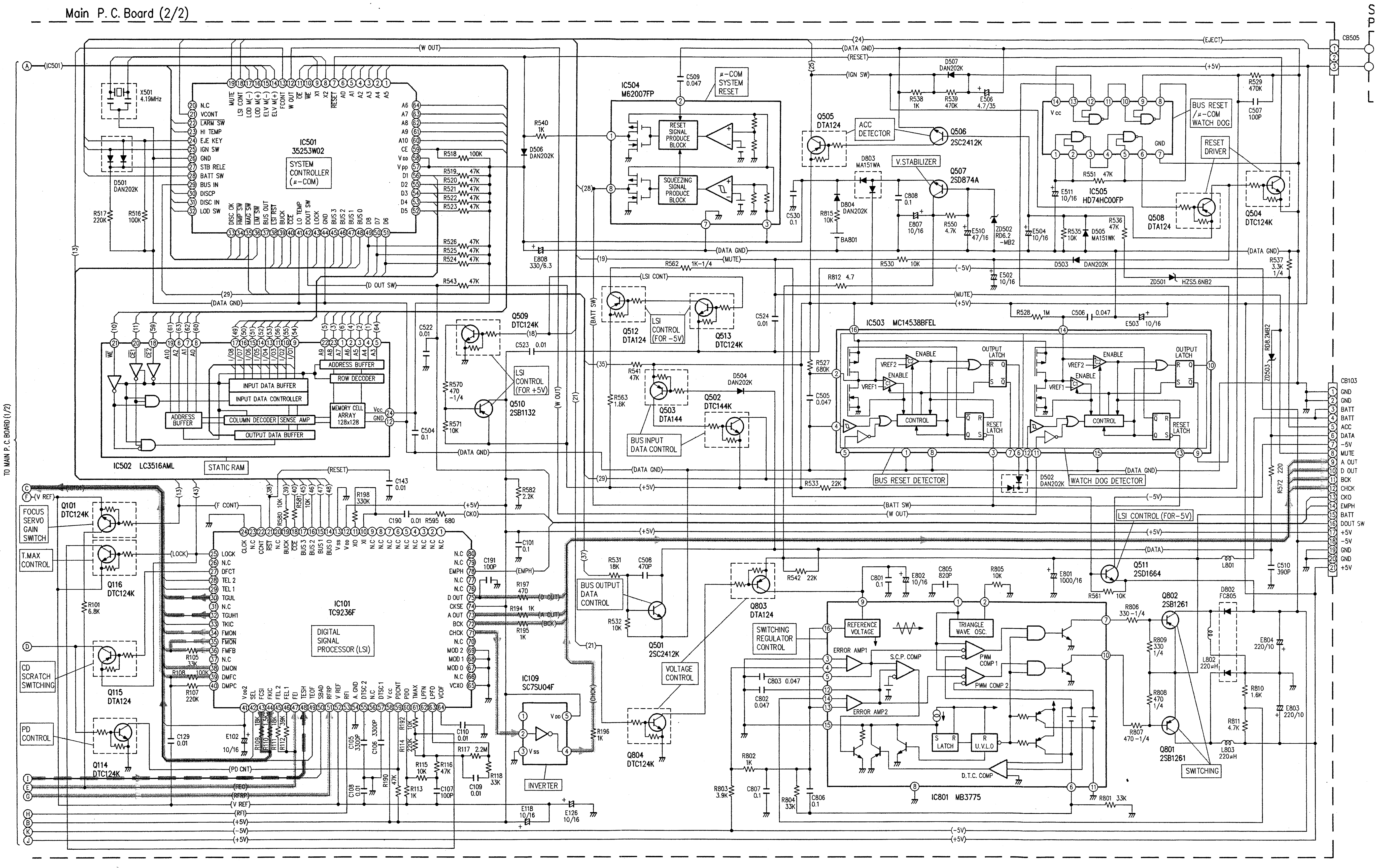
NOTES:

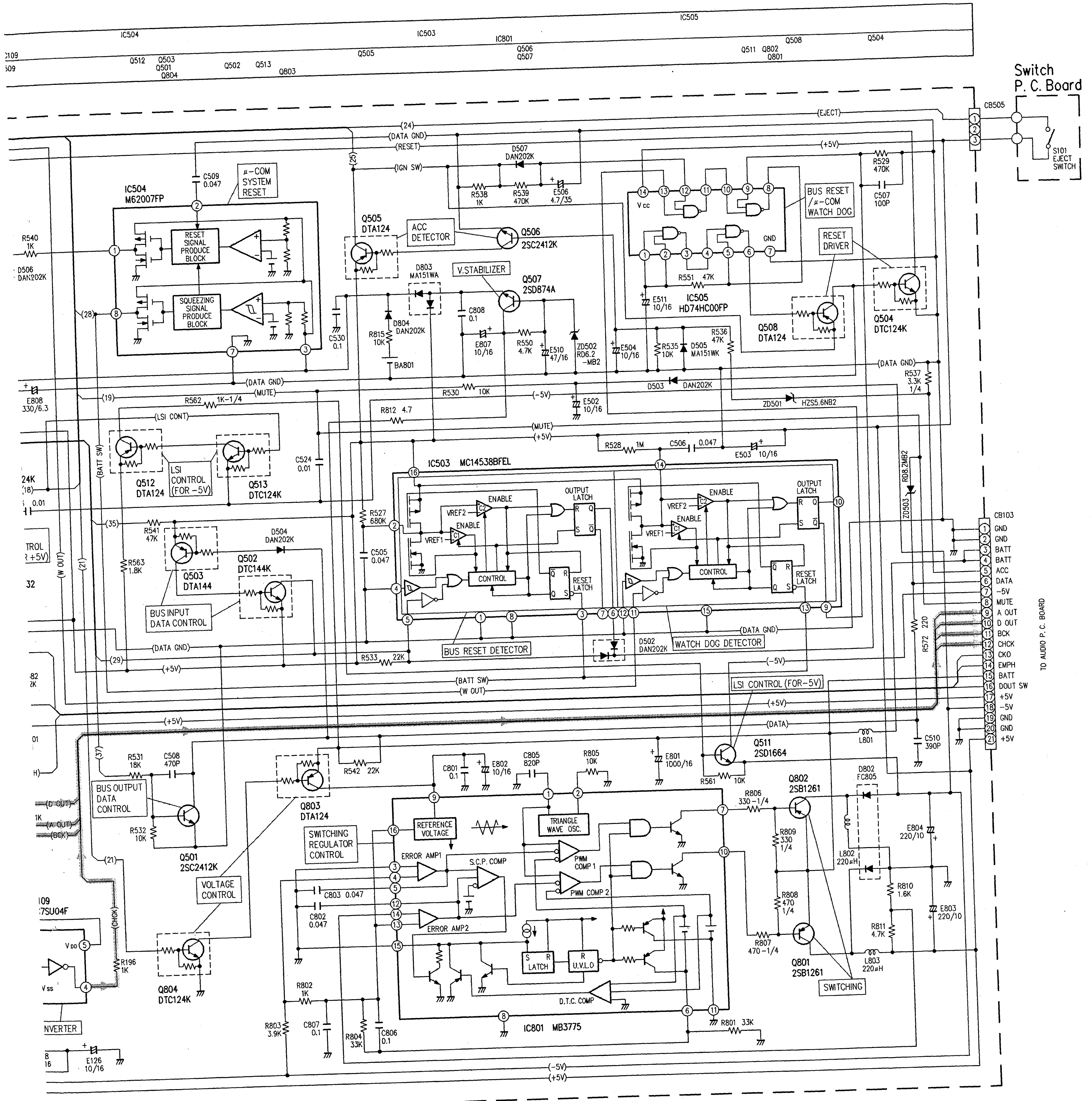
1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1,000,000}$

Schematic Diagram (2/3)

IC	IC502 IC501 IC101 IC109 IC504 IC503 IC801 IC505
Transistor (Q)	Q101 Q116 Q114 Q115 Q509 Q510 Q512 Q503 Q501 Q804 Q502 Q513 Q803 Q505 Q506 Q507 Q511 Q802 Q801 Q508 Q504

Main P. C. Board (2/2)


IC501 35253W02
SYSTEM CONTROLLER (μ-COM)
X501 4.19MHz
D501 DAN202K
IC502 LC3516AML
STATIC RAM
ADDRESS BUFFER
ROW DECODER
INPUT DATA BUFFER
INPUT DATA CONTROLLER
COLUMN DECODER
SENSE AMP
MEMORY CELL ARRAY 128x128
OUTPUT DATA BUFFER
IC504 M62007FP
μ-COM SYSTEM RESET
RESET SIGNAL PRODUCE BLOCK
SQUEEZING SIGNAL PRODUCE BLOCK
Q505 DTA124
ACC DETECTOR
Q506 2SC2412K
V.STABILIZER
Q507 2SD874A
D803 MA151WA
D804 DAN202K
ZD502 RD6.2-MB2
IC505 HD74HC00FP
BUS RESET /μ-COM WATCH DOG
RESET DRIVER
Q508 DTA124
Q504 DTC124K
Q509 DTC124K
LSI CONTROL (FOR +5V)
Q510 2SB1132
Q512 DTA124
LSI CONTROL (FOR -5V)
Q513 DTC124K
Q503 DTA144
Q502 DTC144K
BUS INPUT DATA CONTROL
IC503 MC14538BFEL
ENABLE
OUTPUT LATCH
CONTROL
RESET LATCH
BUS RESET DETECTOR
WATCH DOG DETECTOR
D502 DAN202K
ZD501 HZS5.6NB2
LSI CONTROL (FOR-5V)
Q511 2SD1664
Q101 DTC124K
FOCUS SERVO GAIN SWITCH
T.MAX CONTROL
Q116 DTC124K
CD SCRATCH SWITCHING
Q115 DTA124
PD CONTROL
Q114 DTC124K
IC101 TC9236F
DIGITAL SIGNAL PROCESSOR (LSI)
IC109 SC7SU04F
INVERTER
BUS OUTPUT DATA CONTROL
Q501 2SC2412K
Q803 DTA124
VOLTAGE CONTROL
Q804 DTC124K
SWITCHING REGULATOR CONTROL
REFERENCE VOLTAGE
TRIANGLE WAVE OSC.
ERROR AMP1
ERROR AMP2
S.C.P. COMP
PWM COMP 1
PWM COMP 2
S R LATCH
U.V.L.O
D.T.C. COMP
IC801 MB3775
Q802 2SB1261
Q801 2SB1261
SWITCHING
D802 FC805
L802 220μH
L803 220μH
CB505
SPL
CB103
GND
BATT
ACC
DATA
-5V
MUTE
A OUT
D OUT
BCK
CHCK
CKO
EMPH
DOUT SW
+5V
TO MAIN P.C.BOARD (1/2)
1
2
3
4
5
A
B
C
D
E
F
G
H


IC504 M62007FP
μ-COM SYSTEM RESET
RESET SIGNAL PRODUCE BLOCK
SQUEEZING SIGNAL PRODUCE BLOCK
Q505 DTA124
ACC DETECTOR
Q506 2SC2412K
V.STABILIZER
Q507 2SD874A
D803 MA151WA
D804 DAN202K
D507 DAN202K
IC505 HD74HC00FP
BUS RESET / μ-COM WATCH DOG
RESET DRIVER
Q508 DTA124
Q504 DTC124K
Switch P. C. Board
CB505
S101 EJECT SWITCH
(EJECT)
(DATA GND)
(RESET)
(IGN SW)
(+5V)
(MUTE)
(LSI CONT)
(BATT SW)
(W OUT)
Q512 DTA124
Q513 DTC124K
LSI CONTROL (FOR -5V)
Q503 DTA144
Q502 DTC144K
BUS INPUT DATA CONTROL
IC503 MC14538BFEL
ENABLE
VREF1
VREF2
OUTPUT LATCH
CONTROL
RESET LATCH
BUS RESET DETECTOR
WATCH DOG DETECTOR
D502 DAN202K
ZD501 H2S5.6NB2
LSI CONTROL (FOR-5V)
Q511 2SD1664
CB103
GND
GND
BATT
BATT
ACC
DATA
-5V
MUTE
A OUT
D OUT
BCK
CHCK
CKO
EMPH
BATT
DOUT SW
+5V
-5V
GND
GND
+5V
TO AUDIO P. C. BOARD
BUS OUTPUT DATA CONTROL
Q501 2SC2412K
Q803 DTA124
SWITCHING REGULATOR CONTROL
VOLTAGE CONTROL
Q804 DTC124K
REFERENCE VOLTAGE
TRIANGLE WAVE OSC.
ERROR AMP1
S.C.P. COMP
PWM COMP 1
PWM COMP 2
ERROR AMP2
LATCH
U.V.L.O
D.T.C. COMP
IC801 MB3775
Q802 2SB1261
Q801 2SB1261
D802 FC805
L802 220μH
L803 220μH
SWITCHING
IC109 7SU04F
INVERTER

E F G H I J K

IC101

1	5.1V	17	PS	33	2V	49	2.1V	65	0V
2	5.1V	18	PS	34	2.1V	50	2.4V	66	0V
3	2.4V	19	PS	35	2.1V	51	2.3V	67	0V
4	1.7V	20	1.7V	36	2.1V	52	2.1V	68	0V
5	PS	21	5V	37	5.1V	53	2.5V	69	0V
6	2.4V	22	0V	38	2.1V	54	0V	70	2.6V
7	0.1V	23	0.1V	39	2.1V	55	2.5V	71	2.6V
8	PS	24	0V	40	2.4V	56	2.5V	72	2.5V
9	5.1V	25	5.1V	41	4.2V	57	2.5V	73	0V
10	2.4V	26	5.1V	42	5.1V	58	5.1V	74	5.1V
11	2.4V	27	5.1V	43	2.5V	59	5.1V	75	0V
12	5.1V	28	2.1V	44	2.5V	60	2V	76	5.1V
13	0V	29	2.1V	45	2.1V	61	2.1V	77	5.1V
14	PS	30	2.1V	46	2.1V	62	2.1V	78	0V
15	PS	31	0.3V	47	2.1V	63	2.3V	79	5.1V
16	PS	32	2.1V	48	2.1V	64	1.9V	80	2.2V

IC109

1	0V
2	2.5V
3	0V
4	2.6V
5	5.1V

IC501

1	0V	17	0V	33	0.1V	49	5V
2	0V	18	5V	34	0V	50	5V
3	0V	19	0V	35	0V	51	5V
4	0V	20	0V	36	5.1V	52	5V
5	0V	21	5V	37	PS	53	5V
6	5V	22	0V	38	5V	54	5V
7	5V	23	0V	39	PS	55	5V
8	2.7V	24	0V	40	PS	56	5V
9	2.6V	25	5.2V	41	0V	57	PS
10	5V	26	0V	42	0V	58	5V
11	5V	27	4.8V	43	5.1V	59	0V
12	PS	28	5V	44	0V	60	0V
13	0V	29	PS	45	PS	61	0V
14	0V	30	0V	46	PS	62	0V
15	0V	31	5V	47	PS	63	0V
16	0V	32	0.14V	48	PS	64	0V

IC504

1	5V
2	5V
3	5V
4	0V
5	0V
6	0V
7	0V
8	5V

IC502

1	5V	9	5V	17	5V
2	0V	10	5V	18	0V
3	0V	11	5V	19	0V
4	0V	12	0V	20	5V
5	0V	13	5V	21	5V
6	0V	14	5V	22	5V
7	0V	15	5V	23	0V
8	0V	16	5V	24	5V

IC503

1	0V	9	0V
2	5V	10	0V
3	5V	11	PS
4	0V	12	0V
5	5V	13	5V
6	5V	14	5V
7	5V	15	0V
8	0V	16	5V

IC505

1	0V	8	0V
2	0V	9	PS
3	5.2V	10	5.2V
4	5.2V	11	5.2V
5	0V	12	5V
6	5.2V	13	0V
7	0V	14	5.2V

IC801

1	5V	9	5V
2	0V	10	PS
3	0V	11	5V
4	0V	12	0V
5	0V	13	1.3V
6	0V	14	1.3V
7	PS	15	0V
8	0V	16	1.3V

	E	C	B
Q101	2.1V	2.1V	0V
Q114	0V	PS	PS
Q115	5.1V	0V	5.1V
Q116	2.1V	2.1V	4.9V
Q501	0V	PS	PS
Q502	0V	PS	PS
Q503	5.2V	PS	PS
Q504	0V	5V	0V
Q505	5.2V	5.1V	0V
Q506	0V	0V	0.6V
Q507	5.8V	13.1V	0V
Q508	5.2V	0V	5.2V
Q509	0V	0.1V	5V
Q510	5.2V	5.1V	4.4V
Q511	−5V	−4.9V	−4.3V
Q512	1.4V	−2.3V	0V
Q513	0V	0V	5V
Q801	13.7V	5.3V	13.3V
Q802	13.7V	0.1V	13.4V
Q803	13.6V	13.6V	0V
Q804	0V	0V	5V

(Measuring Conditions)

1.Power Supply Voltage	:DC14V
2.Measuring Meter	:Digital Multi Volt Meter
3.Measuring Point Reference	:Between Ground
4.Measuring Conditions	:Test Disc Play (A-BEX TCD-782 Track NO.2 1KHz) Digital Output Switch (OFF)

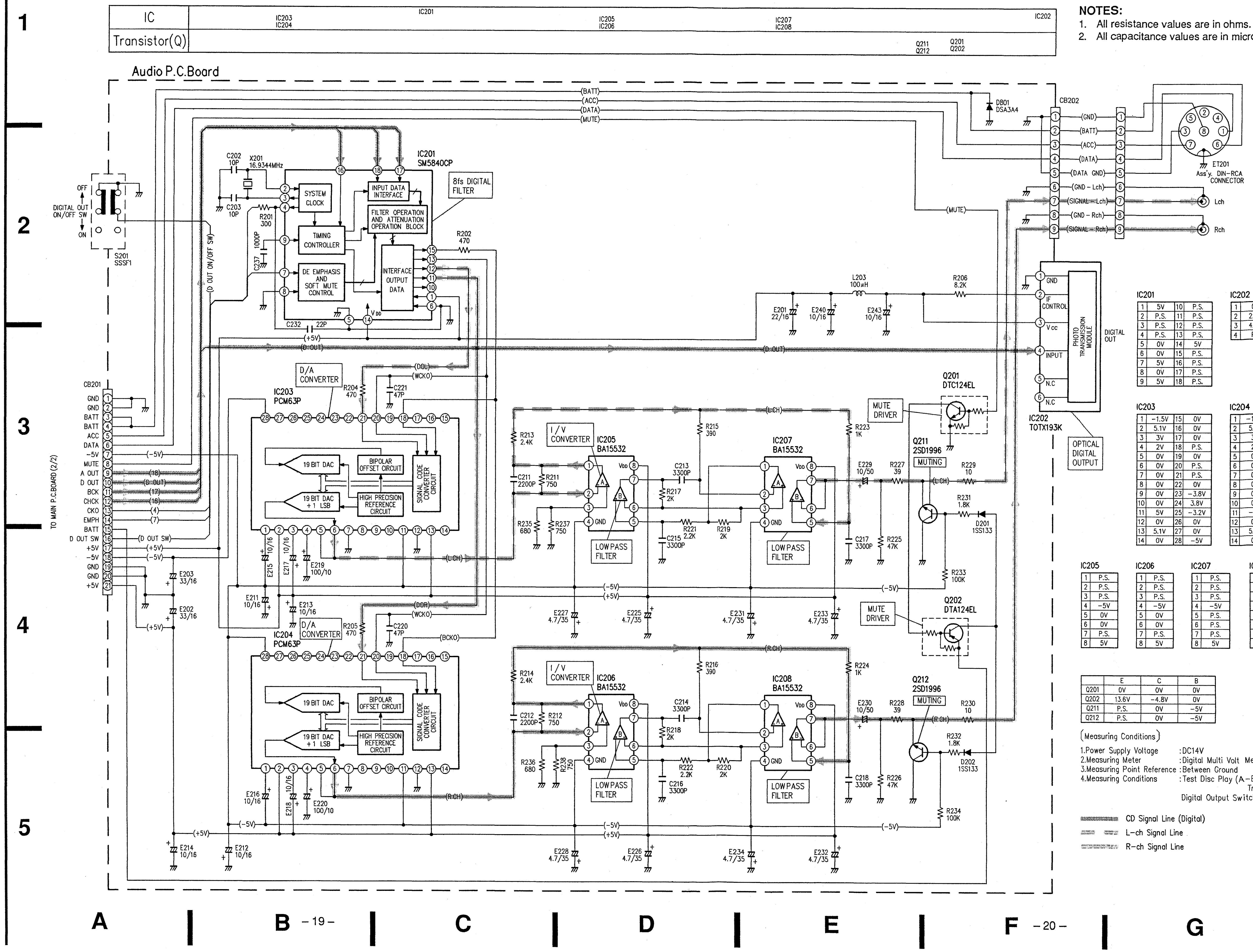
▨	CD Signal Line (Digital)
▬	Focus Servo Signal Line
▬ ▬	Tracking Servo Signal Line
▨	Spindle Servo Signal Line
▨ ▨	Sled Servo Signal Line

NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1,000,000}$

Schematic Diagram (3/3)

NOTES:
1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. P = $\frac{1}{1,000,000}$


IC
Transistor(Q)
IC201
IC203
IC204
IC205
IC206
IC207
IC208
IC202
Q211
Q212
Q201
Q202
Audio P.C.Board
1
2
3
4
5
A
B
C
D
E
F
G
H
OFF
DIGITAL OUT ON/OFF SW
ON
S201
SSSF1
C202 10P
X201 16.9344MHz
C203 10P
R201 300
1000P
C237
SYSTEM CLOCK
TIMING CONTROLLER
DE EMPHASIS AND SOFT MUTE CONTROL
INPUT DATA INTERFACE
FILTER OPERATION AND ATTENUATION OPERATION BLOCK
INTERFACE OUTPUT DATA
IC201
SM5840CP
8fs DIGITAL FILTER
R202 470
C232
22P
(+5V)
(D OUT)
(D OUT ON/OFF SW)
(BATT)
(ACC)
(DATA)
(MUTE)
D801
DSA3A4
CB202
(GND)
(BATT)
(ACC)
(DATA)
(DATA GND)
(GND - Lch)
(SIGNAL - Lch)
(GND - Rch)
(SIGNAL - Rch)
ET201
Ass'y. DIN-RCA CONNECTOR
Lch
Rch
L203 100μH
R206 8.2K
E201 22/16
E240 10/16
E243 10/16
GND
IF CONTROL
Vcc
INPUT
N.C
N.C
PHOTO TRANSMISSION MODULE
DIGITAL OUT
IC202
TOTX193K
OPTICAL DIGITAL OUTPUT
CB201
GND
GND
BATT
BATT
ACC
DATA
-5V
MUTE
A OUT
D OUT
BCK
CHCK
CKO
EMPH
BATT
D OUT SW
+5V
-5V
GND
GND
+5V
TO MAIN P.C.BOARD (2/2)
E203 33/16
E202 33/16
D/A CONVERTER
IC203
PCM63P
R204 470
C221 47P
(DOL)
(WCKO)
(L CH)
19 BIT DAC
19 BIT DAC + 1 LSB
BIPOLAR OFFSET CIRCUIT
HIGH PRECISION REFERENCE CIRCUIT
SIGNAL CODE CONVERTER CIRCUIT
E215 10/16
E217 10/16
E219 100/10
E211 10/16
E213 10/16
R213 2.4K
C211 2200P
R211 750
R235 680
R237 750
I / V CONVERTER
IC205
BA15532
LOW PASS FILTER
R215 390
C213 3300P
R217 2K
C215 3300P
R221 2.2K
R219 2K
IC207
BA15532
R223 1K
E229 10/50
R227 39
C217 3300P
R225 47K
MUTE DRIVER
Q201
DTC124EL
Q211
2SD1996
MUTING
R229 10
R231 1.8K
D201 1SS133
R233 100K
E227 4.7/35
E225 4.7/35
E231 4.7/35
E233 4.7/35
(-5V)
(+5V)
MUTE DRIVER
Q202
DTA124EL
D/A CONVERTER
IC204
PCM63P
R205 470
C220 47P
(DOR)
(BCKO)
(R CH)
R214 2.4K
C212 2200P
R212 750
R236 680
R238 750
IC206
BA15532
R216 390
C214 3300P
R218 2K
C216 3300P
R222 2.2K
R220 2K
IC208
BA15532
R224 1K
E230 10/50
R228 39
C218 3300P
R226 47K
Q212
2SD1996
R230 10
R232 1.8K
D202 1SS133
R234 100K
E216 10/16
E218 10/16
E220 100/10
E214 10/16
E212 10/16
E228 4.7/35
E226 4.7/35
E234 4.7/35
E232 4.7/35

IC201

1	5V	10	P.S.
2	P.S.	11	P.S.
3	P.S.	12	P.S.
4	P.S.	13	P.S.
5	0V	14	5V
6	0V	15	P.S.
7	5V	16	P.S.
8	0V	17	P.S.
9	5V	18	P.S.

IC202

1	0V
2	2.2V
3	4.9V
4	PS

IC203

1	−1.5V	15	0V
2	5.1V	16	0V
3	3V	17	0V
4	2V	18	P.S.
5	0V	19	0V
6	0V	20	P.S.
7	0V	21	P.S.
8	0V	22	0V
9	0V	23	−3.8V
10	0V	24	3.8V
11	5V	25	−3.2V
12	0V	26	0V
13	5.1V	27	0V
14	0V	28	−5V

IC204

1	−1.5V	15	0V
2	5.1V	16	0V
3	3V	17	0V
4	2V	18	P.S.
5	0V	19	0V
6	0V	20	P.S.
7	0V	21	P.S.
8	0V	22	0V
9	0V	23	−3.8V
10	0V	24	3.8V
11	−5V	25	−3.2V
12	0V	26	0V
13	5.1V	27	0V
14	0V	28	−5V

IC205

1	P.S.
2	P.S.
3	P.S.
4	−5V
5	0V
6	0V
7	P.S.
8	5V

IC206

1	P.S.
2	P.S.
3	P.S.
4	−5V
5	0V
6	0V
7	P.S.
8	5V

IC207

1	P.S.
2	P.S.
3	P.S.
4	−5V
5	P.S.
6	P.S.
7	P.S.
8	5V

IC208

1	P.S.
2	P.S.
3	P.S.
4	−5V
5	P.S.
6	P.S.
7	P.S.
8	5V

	E	C	B
Q201	0V	0V	0V
Q202	13.6V	−4.8V	0V
Q211	P.S.	0V	−5V
Q212	P.S.	0V	−5V

(Measuring Conditions)

1.Power Supply Voltage :DC14V
2.Measuring Meter :Digital Multi Volt Meter
3.Measuring Point Reference :Between Ground
4.Measuring Conditions :Test Disc Play (A−BEX TCD−782 Track NO.2 1KHz)
Digital Output Switch (OFF)

▬ CD Signal Line (Digital)
▬ L−ch Signal Line
▬ R−ch Signal Line

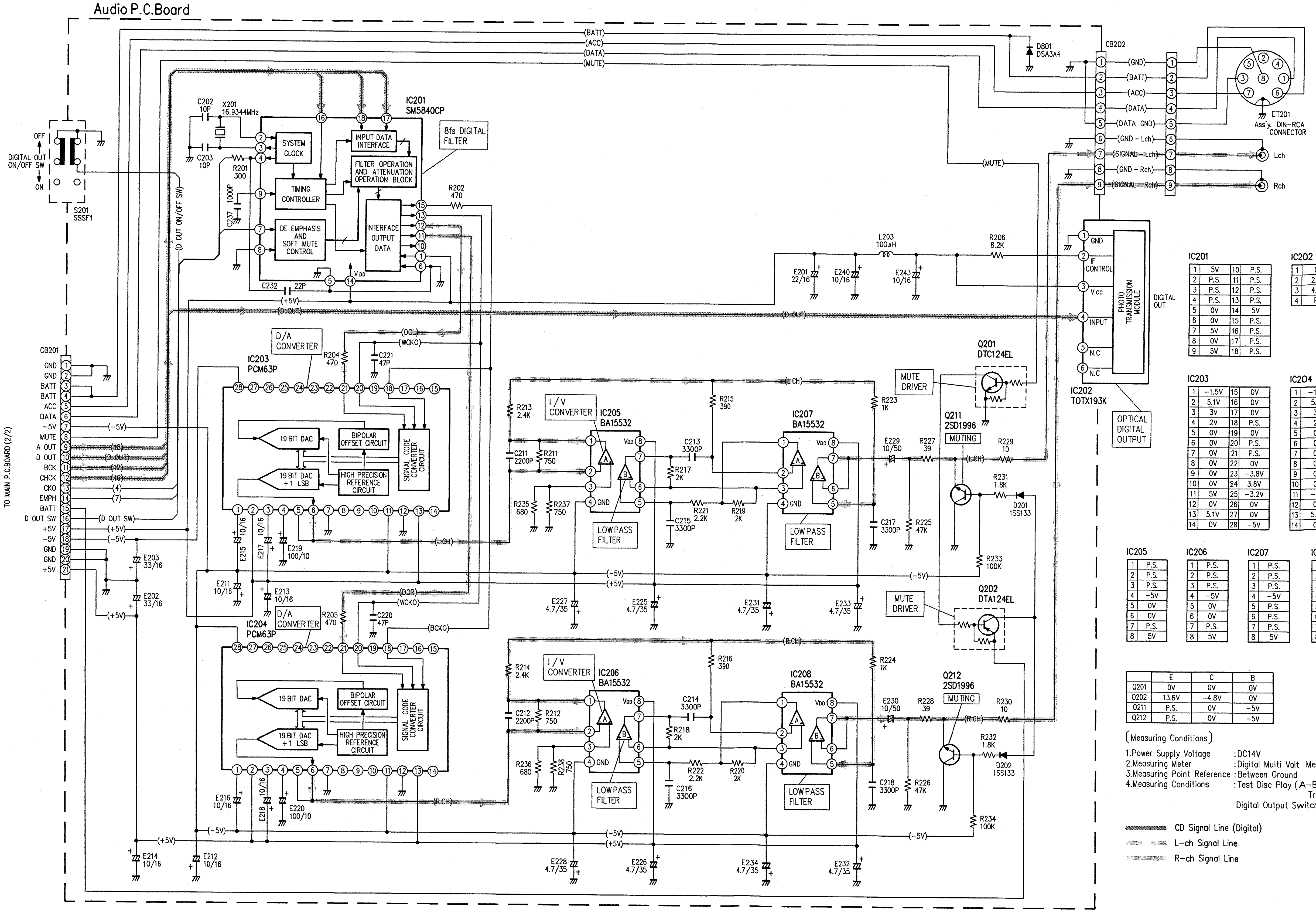
Schematic Diagram (3/3)

IC	IC203 IC204	IC201	IC205 IC206	IC207 IC208			IC202
Transistor(Q)					Q211 Q212	Q201 Q202	

NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1,000,000}$

1
2
3
4
5


Audio P.C.Board
(BATT)
(ACC)
(DATA)
(MUTE)
D801
DSA3A4
CB202
(GND)
(BATT)
(ACC)
(DATA)
(DATA GND)
(GND - Lch)
(SIGNAL - Lch)
(GND - Rch)
(SIGNAL - Rch)
ET201
Ass'y. DIN-RCA CONNECTOR
Lch
Rch
OFF
DIGITAL OUT ON/OFF SW
ON
S201
SSSF1
(D OUT ON/OFF SW)
C202 10P
X201 16.9344MHz
C203 10P
R201 300
C237 1000P
IC201
SM5840CP
SYSTEM CLOCK
INPUT DATA INTERFACE
8fs DIGITAL FILTER
FILTER OPERATION AND ATTENUATION OPERATION BLOCK
TIMING CONTROLLER
DE EMPHASIS AND SOFT MUTE CONTROL
INTERFACE OUTPUT DATA
VDD
R202 470
C232 22P
(+5V)
(D OUT)
(MUTE)
L203 100µH
R206 8.2K
E201 22/16
E240 10/16
E243 10/16
GND
IF CONTROL
Vcc
INPUT
N.C
PHOTO TRANSMISSION MODULE
DIGITAL OUT
IC202
TOTX193K
OPTICAL DIGITAL OUTPUT
CB201
GND
GND
BATT
BATT
ACC
DATA
-5V
MUTE
A OUT
D OUT
BCK
CHCK
CKO
EMPH
BATT
D OUT SW
+5V
-5V
GND
GND
+5V
TO MAIN P.C.BOARD (2/2)
(-5V)
(18)
(D OUT)
(17)
(16)
(4)
(7)
(D OUT SW)
(+5V)
(-5V)
E203 33/16
E202 33/16
(+5V)
D/A CONVERTER
IC203
PCM63P
(DOL)
(WCKO)
R204 470
C221 47P
19 BIT DAC
BIPOLAR OFFSET CIRCUIT
19 BIT DAC +1 LSB
HIGH PRECISION REFERENCE CIRCUIT
SIGNAL CODE CONVERTER CIRCUIT
E215 10/16
E217 10/16
E219 100/10
(L.CH)
E211 10/16
E213 10/16
(DOR)
(WCKO)
IC204
PCM63P
R205 470
C220 47P
(BCKO)
E216 10/16
E218 10/16
E220 100/10
(R.CH)
(-5V)
(+5V)
E214 10/16
E212 10/16
R213 2.4K
I/V CONVERTER
IC205
BA15532
C211 2200P
R211 750
R235 680
R237 750
LOWPASS FILTER
C213 3300P
R215 390
R217 2K
R221 2.2K
R219 2K
C215 3300P
IC207
BA15532
R223 1K
E227 4.7/35
E225 4.7/35
E231 4.7/35
E233 4.7/35
R214 2.4K
IC206
BA15532
C212 2200P
R212 750
R236 680
R238 750
C214 3300P
R216 390
R218 2K
R222 2.2K
R220 2K
C216 3300P
IC208
BA15532
R224 1K
E228 4.7/35
E226 4.7/35
E234 4.7/35
E232 4.7/35
MUTE DRIVER
Q201
DTC124EL
Q211
2SD1996
MUTING
E229 10/50
R227 39
R229 10
(L.CH)
R231 1.8K
D201 1SS133
C217 3300P
R225 47K
R233 100K
(-5V)
Q202
DTA124EL
Q212
2SD1996
E230 10/50
R228 39
R230 10
(R.CH)
R232 1.8K
D202 1SS133
C218 3300P
R226 47K
R234 100K

IC201			
1	5V	10	P.S.
2	P.S.	11	P.S.
3	P.S.	12	P.S.
4	P.S.	13	P.S.
5	0V	14	5V
6	0V	15	P.S.
7	5V	16	P.S.
8	0V	17	P.S.
9	5V	18	P.S.

IC202	
1	0V
2	2.2V
3	4.9V
4	PS

IC203			
1	-1.5V	15	0V
2	5.1V	16	0V
3	3V	17	0V
4	2V	18	P.S.
5	0V	19	0V
6	0V	20	P.S.
7	0V	21	P.S.
8	0V	22	0V
9	0V	23	-3.8V
10	0V	24	3.8V
11	5V	25	-3.2V
12	0V	26	0V
13	5.1V	27	0V
14	0V	28	-5V

IC204			
1	-1.5V	15	0V
2	5.1V	16	0V
3	3V	17	0V
4	2V	18	P.S.
5	0V	19	0V
6	0V	20	P.S.
7	0V	21	P.S.
8	0V	22	0V
9	0V	23	-3.8V
10	0V	24	3.8V
11	-5V	25	-3.2V
12	0V	26	0V
13	5.1V	27	0V
14	0V	28	-5V

IC205	
1	P.S.
2	P.S.
3	P.S.
4	-5V
5	0V
6	0V
7	P.S.
8	5V

IC206	
1	P.S.
2	P.S.
3	P.S.
4	-5V
5	0V
6	0V
7	P.S.
8	5V

IC207	
1	P.S.
2	P.S.
3	P.S.
4	-5V
5	P.S.
6	P.S.
7	P.S.
8	5V

IC208	
1	P.S.
2	P.S.
3	P.S.
4	-5V
5	P.S.
6	P.S.
7	P.S.
8	5V

	E	C	B
Q201	0V	0V	0V
Q202	13.6V	-4.8V	0V
Q211	P.S.	0V	-5V
Q212	P.S.	0V	-5V

(Measuring Conditions)

1.Power Supply Voltage :DC14V
2.Measuring Meter :Digital Multi Volt Meter
3.Measuring Point Reference :Between Ground
4.Measuring Conditions :Test Disc Play (A-BEX TCD-782 Track NO.2 1KHz)
Digital Output Switch (OFF)

▬ CD Signal Line (Digital)
▬ ▬ L-ch Signal Line
▬ R-ch Signal Line

A B C D E F G H

Electrical Parts List

Resistor : Carbon resistors under 1 / 4 watts are not mentioned in the parts list, please confirm them by schematic diagram.
Capacitor : μF = microfarads, pF = picofarads

Abbreviations

RES. = Resistor
C.F. = Carbon Film
M.F. = Metal Film
M.O. = Metal Oxide Film
M.P. = Metal Plate
TR. = Transistor
TRANS. = Transformer
CP. = Chip

CAP. = Capacitor
ELY. = Electrolytic
CER. = Ceramic
MYL. = Mylar
TAN. = Tantalum
POLY. = Polystyrol
PP. = Polypropylene
PLT. = Polyethylene
PF. = Polyester Film

Main P. C. Board

IC's

Symbol No.	Part No.	Description
IC101	51T25985W01	TC9236F
IC102	51T25984W01	TA8191F
IC103	51T15264W01	TCA0372M
IC104	51T15264W01	TCA0372M
IC109	51T45285W01	SC7SU04F
IC501	51T35253W02	35253W02
IC502	51T84723F02	LC3516AML
or	51T90640F01	CXK5816M
IC503	51T25370W01	MC14538BFEL
IC504	51T35308W01	M62007FP
IC505	51T90277F10	HD74HC00FP
or	51T25904W03	MC74HC00AFL1
IC506	51T73285F01	BA10393F
IC701	51T15264W01	TCA0372M
IC702	51T15264W01	TCA0372M
IC801	51T35309W01	MB3775

Transistors

Symbol No.	Part No.	Description
Q101	48T62967F03	CP., DTC124K
Q102	48T63420F01	CP., 2SA1037K
Q103	48T80611F01	CP., 2SB1132
Q110	48T62967F02	CP., DTC114K
Q111	48T63417F01	CP., 2SC2412K
Q112	48T62967F09	CP., DTC114TK
Q113	48T62967F09	CP., DTC114TK
Q114	48T62967F03	CP., DTC124K
Q115	48T62966F03	CP., DTA124
Q116	48T62967F03	CP., DTC124K
Q501	48T63417F01	CP., 2SC2412K
Q502	48T62967F04	CP., DTC144K
Q503	48T62966F04	CP., DTA144
Q504	48T62967F03	CP., DTC124K
Q505	48T62966F03	CP., DTA124
Q506	48T63417F01	CP., 2SC2412K
Q507	48T73023F01	2SD874A
Q508	48T62966F03	CP., DTA124
Q509	48T62967F03	CP., DTC124K
Q510	48T80611F01	CP., 2SB1132
Q511	48T80614F01	CP., 2SD1664
Q512	48T62966F03	CP., DTA124
Q513	48T62967F03	CP., DTC124K
Q801	48T15511W02	CP., 2SB1261
Q802	48T15511W02	CP., 2SB1261
Q803	48T62966F03	CP., DTA124
Q804	48T62967F03	CP., DTC124K

Diodes

Symbol No.	Part No.	Description
D103	48T63463F01	CP., DAP202K
D104	48T94608F02	CP., DAP202U
D501	48T63462F01	CP., DAN202K
D502	48T63462F01	CP., DAN202K
D503	48T63462F01	CP., DAN202K
D504	48T63462F01	CP., DAN202K
D505	48T52446F01	CP., MA151WK
D506	48T63462F01	CP., DAN202K
D507	48T63462F01	CP., DAN202K
D802	48T35310W01	CP., FC805
D803	48T52445F01	CP., MA151WA
D804	48T63462F01	CP., DAN202K
ZD501	48T90517F27	Zener, HZS5.6NB2
ZD502	48T62934F25	Zener, CP. RD6.2MB2
ZD503	48T62934F34	Zener, CP. RD8.2MB2

Coils

Symbol No.	Part No.	Description
L801	25T52199F01	Choke
L802	24T16271W13	220μH
L803	24T16271W13	220μH

Thermistor / Crystal

Symbol No.	Part No.	Description
TH501	48T93439F06	Thermistor, 100K ohm
X501	91T15285W01	CER., Lock 4.19MHz

Symbol No.	Part No.	Description
Capacitors		
C101	08S65128F76	CP., 0.1μF
E101	23T25149W13	ELY., 100μF / 10V
E102	23T25149W09	ELY., 10μF / 16V
E103	23T25149W09	ELY., 10μF / 16V
E104	23T74437F32	TAN., 10μF / 16V
C105	08S65128F63	CP., 3300pF
E105	23T25149W07	ELY., 3.3μF / 50V
C106	08S65128F63	CP., 3300pF
C107	08S65128F35	CP., 100pF
E107	23T74437F32	TAN., 10μF / 16V
C108	08S65128F69	CP., 0.01μF
E108	23T25149W12	ELY., 47μF / 16V
C109	08S65128F69	CP., 0.01μF
E109	23T25149W12	ELY., 47μF / 16V
C110	08S65128F69	CP., 0.01μF
C111	08S65128F57	CP., 1000pF
C113	08T15399W01	CP., 0.022μF
C114	08S65128F64	CP., 3900pF
C115	08T15807W05	CP., 0.1μF
C116	08S65128F43	CP., 220pF
C117	08S65128F62	CP., 2700pF
E117	23T25149W04	ELY., 0.47μF / 50V
C118	08T15399W03	CP., 0.047μF
E118	23T74437F32	TAN., 10μF / 16V
C119	08S65128F29	CP., 56pF
E119	23T74437F32	TAN., 10μF / 16V
C120	08S65128F69	CP., 0.01μF
E120	23T25149W09	ELY., 10μF / 16V
C121	08S65128F13	CP., 12pF
E121	23T25149W09	ELY., 10μF / 16V
C122	08S53332F47	CP., 0.01μF
C123	08T15807W05	CP., 0.1μF
C124	08S82122F06	CP., 3pF
E125	23T74437F32	TAN., 10μF / 16V
C126	08T15807W05	CP., 0.1μF
E126	23T74437F32	TAN., 10μF / 16V
C127	08T15807W05	CP., 0.1μF
E127	23T25149W09	ELY., 10μF / 16V
E128	23T74437F32	TAN., 10μF / 16V
C129	08S65128F69	CP., 0.01μF
C130	08S65128F65	CP., 4700pF
C131	08T15399W03	CP., 0.047μF
C132	08T15399W03	CP., 0.047μF
C140	08S65128F65	CP., 4700pF
C141	08T15807W05	CP., 0.1μF
C142	08S65128F60	CP., 1800pF
C143	08S65128F69	CP., 0.01μF
E150	23T74437F32	TAN., 10μF / 16V
C190	08S65128F69	CP., 0.01μF
C191	08S65128F35	CP., 100pF
E502	23T25149W09	ELY., 10μF //16V
E503	23T25149W09	ELY., 10μF / 16V
C504	08S53332F57	CP., 0.1μF
E504	23S61523F12	ELY., 10μF / 16V
C505	08T15807W01	CP., 0.047μF
C506	08T15807W01	CP., 0.047μF
E506	23T25149W15	ELY., 4.7μF / 35V
C507	08S65128F35	CP., 100pF
C508	08S65128F51	CP., 470pF
C509	08T15807W01	CP., 0.047μF
C510	08S65128F49	CP., 390pF
E510	23T25149W12	ELY., 47μF / 16V
E511	23T25149W09	ELY., 10μF / 16V
C520	08T15807W05	CP., 0.1μF
C521	08T15807W05	CP., 0.1μF
C522	08S65128F69	CP., 0.01μF
C523	08S65128F69	CP., 0.01μF
C524	08S65128F69	CP., 0.01μF
C703	08S65128F69	CP., 0.01μF
C704	08S65128F69	CP., 0.01μF
C801	08S53332F57	CP., 0.1μF
E801	23T25364W01	ELY., 1000μF / 16V
C802	08T15399W03	CP., 0.047μF
E802	23T74437F32	TAN., 10μF / 16V
C803	08T15399W03	CP., 0.047μF
E803	23S16086W01	ELY., 220μF / 10V
E804	23S16086W01	ELY., 220μF / 10V
C805	08S65128F56	CP., 820pF
E805	23S16086W02	ELY., 330μF / 6.3V
C806	08T15807W05	CP., 0.1μF
E806	23S16086W02	ELY., 330μF / 6.3V
C807	08S53332F57	CP., 0.1μF
E807	23S25149W09	ELY., 10μF / 16V
C808	08S65128F76	CP., 0.1μF
E808	23S16086W02	ELY., 330μF / 6.3V
E810	23S16086W02	ELY., 330μF / 6.3V
E811	23S16086W02	ELY., 330μF / 6.3V
C530	08S65128F76	CP., 0.1μF
Resistors (All resistors are chip 1/10W ± 5% unless otherwise noted.)		
R101	06S64995F73	6.8K ohm
R102	06S64996F18	470K ohm
R103	06S64995F39	270 ohm
R105	06S64995F89	33K ohm
R106	06S64995F85	22K ohm
R107	06S64996F10	220K ohm
R108	06S64996F02	100K ohm
R109	06S64995F83	18K ohm
R110	06S64995F57	1.5K ohm
R111	06S64995F83	18K ohm

Symbol No.	Part No.	Description
R112	06S64995F91	39K ohm
R113	06S64995F53	1K ohm
R114	06S64996F10	220K ohm
R115	06S64995F77	10K ohm
R116	06S64995F93	47K ohm
R117	06S64996F30	2.2M ohm
R118	06S64995F89	33K ohm
R119	06S64995F95	56K ohm
R120	06S64995F77	10K ohm
R121	06S64995F87	27K ohm
R122	06S64995F63	2.7K ohm
R123	06S64996F12	270K ohm
R124	06S64995F83	18K ohm
R125	06S64996F02	100K ohm
R126	06S64995F77	10K ohm
R127	06S64996F04	120K ohm
R128	06S64996F02	100K ohm
R129	06S64995F81	15K ohm
R130	06S64995F85	22K ohm
R131	06S64995F77	10K ohm
R132	06S64995F77	10K ohm
R133	06S64995F77	10K ohm
R134	06S64996F20	560K ohm
R135	06S64996F02	100K ohm
R136	06S64995F61	2.2K ohm
R137	06S64995F77	10K ohm
R138	06S64995F69	4.7K ohm
R139	06S64995F69	4.7K ohm
R140	06S64995F69	4.7K ohm
R141	06T70072F05	10 ohm 1/4W
R144	06S64995F53	1K ohm
R145	06S64995F47	560 ohm
R146	06S64995F81	15K ohm
R147	06S64995F97	68K ohm
R148	06S64995F85	22K ohm
R149	06S64995F77	10K ohm
R150	06S64995F77	10K ohm
R151	06S64995F85	22K ohm
R152	06S64995F85	22K ohm
R153	06S64995F77	10K ohm
R154	06S64995F77	10K ohm
R155	06S64995F85	22K ohm
R156	06S64995F85	22K ohm
R157	06S64995F77	10K ohm
R158	06S64995F77	10K ohm
R159	06S64995F85	22K ohm
R160	06S64995F85	22K ohm
R161	06S64995F77	10K ohm
R162	06S64995F77	10K ohm
R163	06S64995F85	22K ohm
R166	06T70072F05	10 ohm 1/4W
R167	06S64996F04	120K ohm
R168	06T70072F05	10 ohm 1/4W
R179	06S64995F63	2.7K ohm
R180	06S64995F77	10K ohm
R181	06S64996F02	100K ohm
R183	06S64996F10	220K ohm
R185	06S64995F83	18K ohm
R186	06S64995F53	1K ohm
R187	06S64995F53	1K ohm
R188	06S64995F65	3.3K ohm
R189	06S64996F18	470K ohm
R190	06S64995F93	47K ohm
R191	06S64995F85	22K ohm
R192	06S64995F77	10K ohm
R194	06S64995F53	1K ohm
R195	06S64995F53	1K ohm
R196	06S64995F53	1K ohm
R197	06S64995F45	470 ohm
R198	06S64996F14	330K ohm
R501	06S64995F37	220 ohm
R502	06S64995F53	1K ohm
R503	06S64996F02	100K ohm
R504	06S64995F89	33K ohm
R505	06S64995F93	47K ohm
R506	06S64995F35	180 ohm
R507	06S64995F93	47K ohm
R508	06S64995F93	47K ohm
R509	06S64995F89	33K ohm
R510	06S64995F45	470 ohm
R511	06S64995F89	33K ohm
R512	06S64995F93	47K ohm
R513	06S64995F79	12K ohm
R514	06S64996F26	1M ohm
R515	06S64996F02	100K ohm
R516	06S64996F02	100K ohm
R517	06S64996F10	220K ohm
R518	06S64996F02	100K ohm
R519	06S64995F93	47K ohm
R520	06S64995F93	47K ohm
R521	06S64995F93	47K ohm
R522	06S64995F93	47K ohm
R523	06S64995F93	47K ohm
R524	06S64995F93	47K ohm
R525	06S64995F93	47K ohm
R526	06S64995F93	47K ohm
R527	06S64996F22	680K ohm
R528	06S64996F26	1M ohm
R529	06S64996F18	470K ohm
R530	06S64995F77	10K ohm
R531	06S64995F83	18K ohm
R532	06S64995F77	10K ohm
R533	06S64995F85	22K ohm
R535	06S64995F77	10K ohm

Symbol No.	Part No.	Description
R536	06S64995F93	47K ohm
R537	06T70072F65	3.3K ohm 1/4W
R538	06S64995F53	1K ohm
R539	06S64996F18	470K ohm
R540	06S64995F53	1K ohm
R541	06S64995F93	47K ohm
R542	06S64995F85	22K ohm
R543	06S64995F93	47K ohm
R550	06S64995F69	4.7K ohm
R551	06S64995F93	47K ohm
R560	06S64995F89	33K ohm
R561	06S64995F77	10K ohm
R562	06T70072F53	1K ohm 1/4W
R563	06S64995F59	1.8K ohm
R570	06T70072F45	470 ohm 1/4W
R571	06S64995F77	10K ohm
R572	06T70072F37	220 ohm 1/4W
R580	06S64995F77	10K ohm
R581	06S64995F77	10K ohm
R582	06S64995F61	2.2K ohm
R583	06S64995F63	2.7K ohm
R584	06S64995F63	2.7K ohm
R590	06S64996F40	2.2 ohm
R591	06S64996F40	2.2 ohm
R595	06S64995F49	680 ohm
R701	06S64995F75	8.2K ohm
R702	06S64995F77	10K ohm
R703	06S64995F77	10K ohm
R704	06S64995F75	8.2K ohm
R705	06S64995F77	10K ohm
R706	06S64995F77	10K ohm
R707	06S64995F75	8.2K ohm
R709	06S64995F77	10K ohm
R710	06S64995F77	10K ohm
R711	06S64995F75	8.2K ohm
R713	06S64995F77	10K ohm
R714	06S64995F77	10K ohm
R801	06S64995F89	33K ohm
R802	06S64995F53	1K ohm
R803	06S64995F67	3.9K ohm
R804	06S64995F89	33K ohm
R805	06S64995F77	10K ohm
R806	06T70072F41	330 ohm 1/4W
R807	06T70072F45	470 ohm 1/4W
R808	06T70072F45	470 ohm 1/4W
R809	06T70072F41	330 ohm 1/4W
R810	06S64995F58	1.6K ohm
R811	06S64995F69	4.7K ohm
R812	06S64995F01	4.7 ohm
R815	06S64995F77	10K ohm
R820	06T70072F90	1 ohm 1/4W
R821	06T70072F90	1 ohm 1/4W

Symbol No.	Part No.	Description
VR101	18T91059F20	Variable, 150K ohm
VR102	18T94215F14	Variable, 15K ohm
VR103	18T94215F09	Variable, 2.2K ohm

Audio P. C. Board

IC's

Symbol No.	Part No.	Description
IC201	51T35105W01	SM5840CP
IC203	51T35201W01	PCM63P
IC204	51T35201W01	PCM63P
IC205	51T25154W02	BA15532
IC206	51T25154W02	BA15532
IC207	51T25154W02	BA15532
IC208	51T25154W02	BA15532

Transistors

Symbol No.	Part No.	Description
Q201	48T82763F03	DTC124EL
Q202	48T82762F03	DTA124EL
Q211	48T90183F03	2SD1996
Q212	48T90183F03	2SD1996

Diodes

Symbol No.	Part No.	Description
D201	48T68828F01	1SS133
D202	48T68828F01	1SS133
D801	48T68580F02	DSA3A4

Switch

Symbol No.	Part No.	Description
S201	40T25473W02	Slide, SSSF1 (DIGITAL OUT ON/OFF)

Coil / Crystal

Symbol No.	Part No.	Description
L203	24T50508F34	Inductor, 100μH
X201	91T25773W92	Crystal, 16.9344MHz

Capacitors

Symbol No.	Part No.	Description
E201	23T74437F34	TAN., 22μF / 16V
C202	21C45322G10	CER., 10pF
E202	23T00181L17	ELY., 33μF / 16V
C203	21S40655F11	CER., 10pF

Symbol No.	Part No.	Description
E203	23T00181L17	ELY., 33μF / 16V
C211	08T35388W09	TF, 2200pF
E211	23T25149W09	ELY., 10μF / 16V
C212	08T35388W09	TF, 2200pF
E212	23T25149W09	ELY., 10μF / 16V
C213	08T00152L15	PP., 3300pF
E213	23T25149W09	ELY., 10μF / 16V
C214	08T00152L15	PP., 3300pF
E214	23T25149W09	ELY., 10μF / 16V
C215	08T00152L15	PP., 3300pF
E215	23T25149W09	ELY., 10μF / 16V
C216	08T00152L15	PP., 3300pF
E216	23T25149W09	ELY., 10μF / 16V
C217	08T00152L15	PP., 3300pF
E217	23T25149W09	ELY., 10μF / 16V
C218	08T00152L15	PP., 3300pF
E218	23T25149W09	ELY., 10μF / 16V
E219	23T00181L09	ELY., 100μF / 10V
C220	21S40655F19	CER., 47pF
E220	23T00181L09	ELY., 100μF / 10V
C221	21S40655F19	CER., 47pF
E225	23T25149W15	ELY., 4.7μF / 35V
E226	23T25149W15	ELY., 4.7μF / 35V
E227	23T25149W15	ELY., 4.7μF / 35V
E228	23T25149W15	ELY., 4.7μF / 35V
E229	23T00181L44	ELY., 10μF / 50V
E230	23T00181L44	ELY., 10μF / 50V
E231	23T25149W15	ELY., 4.7μF / 35V
C232	21S40655F15	CER., 22pF
E232	23T25149W15	ELY., 4.7μF / 35V
E233	23T25149W15	ELY., 4.7μF / 35V
E234	23T25149W15	ELY., 4.7μF / 35V
C237	08T52714F01	CER., 1000pF
E240	23T25149W09	ELY., 10μF / 16V
E243	23T25149W09	ELY., 10μF / 16V

Miscellaneous

Symbol No.	Part No.	Description
BA801	60T91060F01	Battery, LIT. CR2032-HE2
ET201	01T35186W01	Assy., DIN-RCA Connector
HD101	88T15309W01	Pick-Up Unit SF-87.5
IC202	51T45264W01	IC, TOTX193K
LD101	48T16057W01	LED, AN501 (RED)
LD102	48T16057W01	LED, AN501 (RED)
LD103	48T16057W01	LED, AN501 (RED)
M101	59T90879F01	Motor, Load 6V-260mA (LOADING)

Symbol No.	Part No.	Description
M102	59T15716W01	Motor, Load 8V-85mA (ELEVATOR)
M103	59T52973F03	Motor, Servo 6V-210mA (SLED)
PI101	48T15722W01	Interrupter, Photo GP1S51
PT101	48T15938W03	TR., Photo PS5022-B1
PT102	48T15938W03	TR., Photo PS5022-B1
PT103	48T15938W02	TR., Photo PS502
Q1003	48T51089F04	TR., 2SA937
S101	40T10876W02	Switch, Tact SKHLAJ (EJECT)
S102	40T71025F01	Switch, Detector (LOADING)
S103	40T71025F01	Switch, Detector (HOME)
S104	40T71025F01	Switch, Detector (MAGAZINE)
S105	40T71025F01	Switch, Detector (LIMIT)

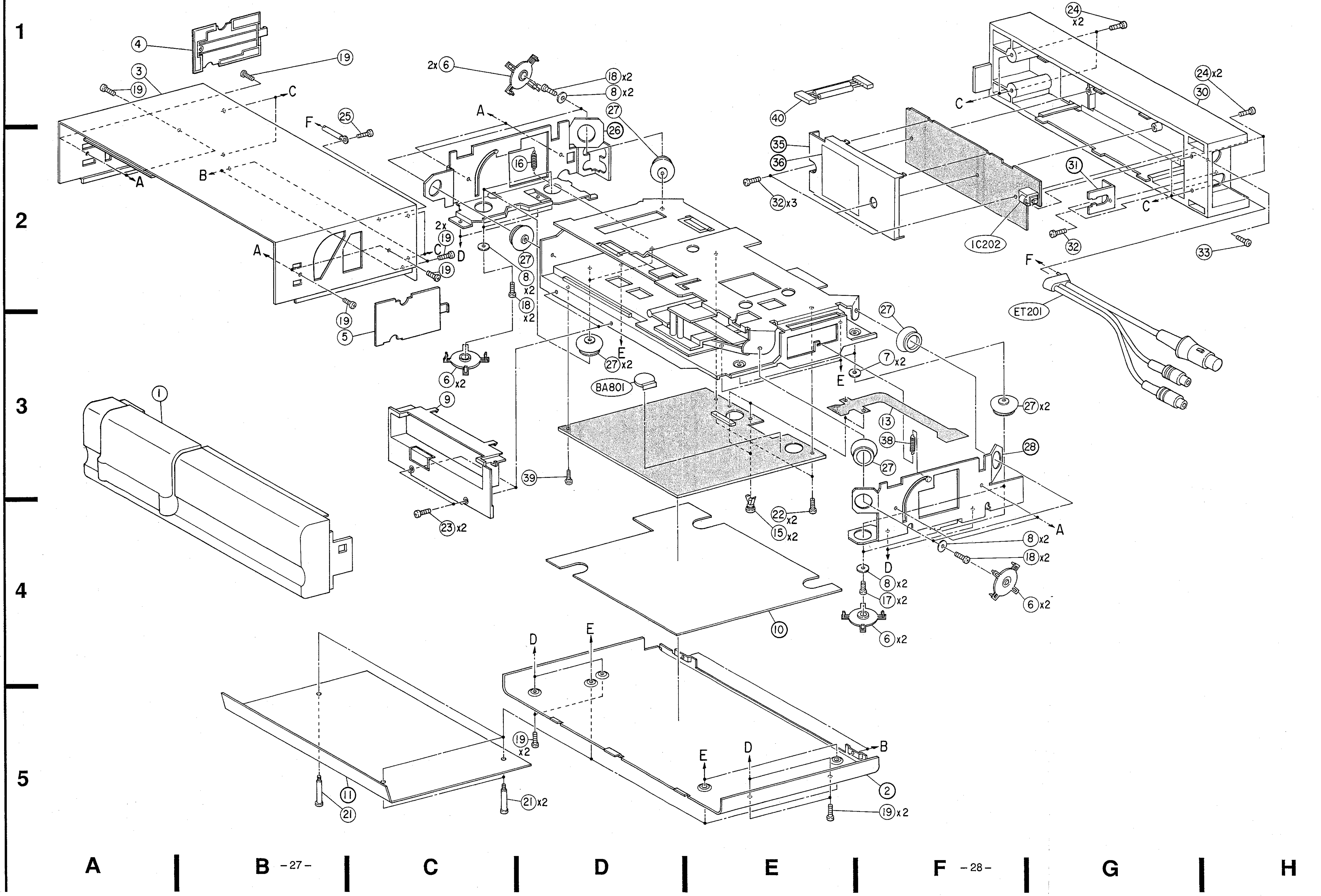
Cabinet Assembly Parts List

Note : The parts without parts list are not supplied.

Symbol No.	Index	Part No.	Description
1	3-A	13T35250W02	Assy., Front Escutcheon
3	1-A	15D41083W01	Cover, Top
4	1-A	15B41292W01	Cover, Plate(L)
5	3-B	15B41293W01	Cover, Plate(R)
6		15B40809W01	Holder, Damper (C)
7	3-F	34A48026W01	Washer, Damper
8		04S40075G60	Washer, Polyslider (M3.2)
9	3-C	64B12370W03	Assy., Plate Inner
13	3-F	84T35118W01	Flexible P.C.Board
15	4-E	05B41635J04	Rivet Push
16	2-C	41A41238W01	Spring, Extension (L)
17	4-F	03A48040W02	Screw, Damper (M2.6×6)
18		03A48040W01	Screw, Damper (M2.6×3)
19		03S38013W12	Screw, Bind (M2.6×4)
21		03A48046W01	Screw, Transport (M4×22.5)
22	4-E	03S44205G64	Screw, Pan (M2.6×6)
23	4-C	03S44205G98	Screw, Pan (M2.6×5)
24	1-G	03S40036U11	Screw, Pan (M3×8)
25	1-C	03S44205G05	Screw, Pan (M3×5)
27		75B48059W01	Damper, DR (D)
30	1-G	15T35177W02	Assy., Cover Rear
32		03S68555F04	Screw, Pan (M2.6×6)
33	2-G	03S70494F10	Screw, Pan (M2.6×10)
38	3-F	41A41238W02	Spring, Extension (R)
39	3-D	03A38056W01	Screw, Special (M2.6×6)
40	1-E	01T45064W01	Assy., Shield Wire

Symbol No.	Index	Part No.	Description

Exploded View (Cabinet)



1
2
3
4
5
④
⑲
③
⑲
C
F
㉕
A
B
A
C
D
⑲
2x
⑲
⑲
⑤
2x ⑥
⑱ x2
⑧ x2
㉗
A
㉖
⑯
㉗
⑧ x2
⑱ x2
E
㉗ x2
⑥ x2
BA801
⑨
㊴
㉓ x2
①
㉔ x2
㉔ x2
㉚
C
㊵
㉟
㊱
㉛
㉜ x3
C
IC202
㉜
㉝
F
ET201
㉗
⑦ x2
E
㉗ x2
⑬
㊳
㉗
㉘
㉒ x2
⑮ x2
A
⑧ x2
⑱ x2
D
⑧ x2
⑰ x2
⑥ x2
⑥ x2
⑩
D
E
⑲ x2
E
D
B
②
⑪
㉑
㉑ x2
⑲ x2
A
B
C
D
E
F
G
H

Packing Assembly Parts List

Symbol No.	Part No.	Description	Symbol No.	Part No.	Description
101	56S41054W30	Carton, Packing (Individual)			
102	56D30917W04	Tray, Packing (L)			
103	56D30917W03	Tray, Packing (R)			
104	01V43800W90	Assy., Kit Installation			
105	68P40870W59	Owner's Manual			
106	01T45053W01	Assy., DIN Connector (5m)			
or	01T15904W02	Assy., DIN Connector (5m)			
or	01T15904W01	Assy., DIN Connector (5.5m)			
or	01T45150W01	Assy., DIN Connector (5m)			
107	28T35041W01	Assy., RCA Cabel (5.5m)			
108	56C40990T19	Sack, Polyethylene			

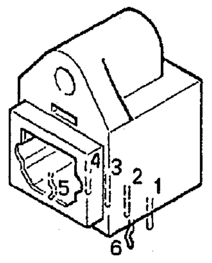
Packing Method View

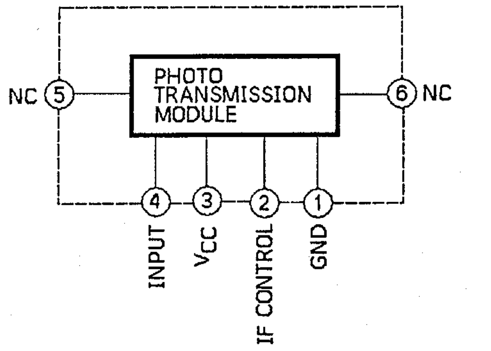
For Packing Method View of this Service Manual, refer to the Service Manual · 5959 (68P32103W02).

Semi-Conductor Lead Identifications

Note : The parts is not mentioned, refer to the Service Manual 5959 (68P32103W02).

TOTX193K : IC202





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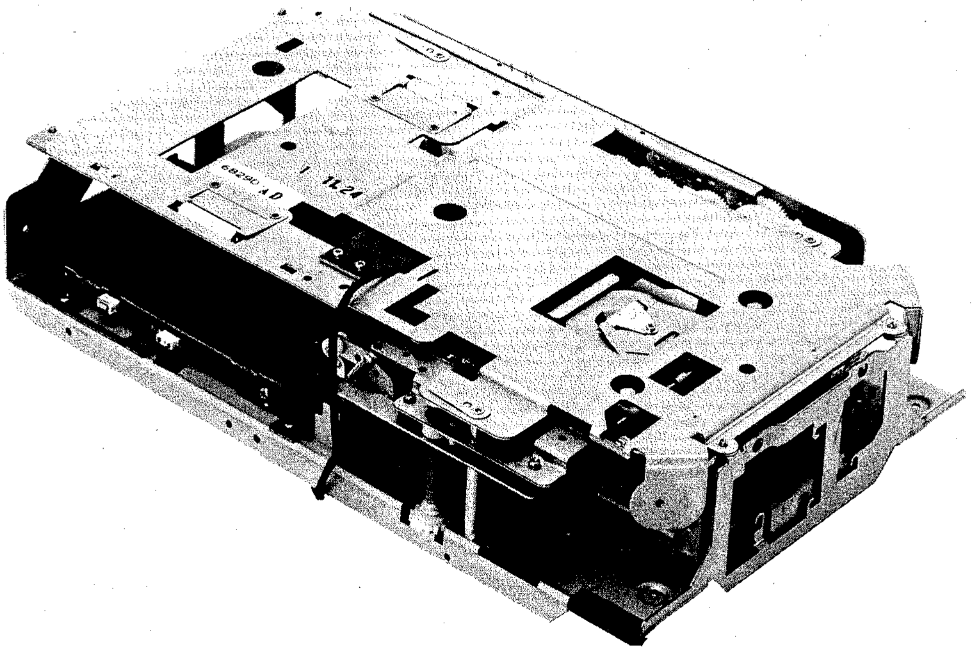
ALPINE®
SERVICE MANUAL

CD Remote Changer Mechanism
CD Shuttle

V27393

ADDENDUM & REVISED (II)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DR SERIES

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Disassembly Instructions

<DR24A010 Model Only>

1. Removal of Pick-up Unit

(1)Remove three screws marked "O" as shown in Figure 1.

2. Removal of Sled Motor

(1) After removal of the pick-up unit, remove the motor bracket with sled motor by removing the solder (A) and two screws marked "X" as shown in Figure 1.

(2) Remove the solder (B) and a screw marked "□" as shown in Figure 1.

3. Removal of Head Unit

(1) After removal of the motor bracket, remove the shaft bracket and the screw bracket by removing two screws marked "△" as shown in Figure 1.

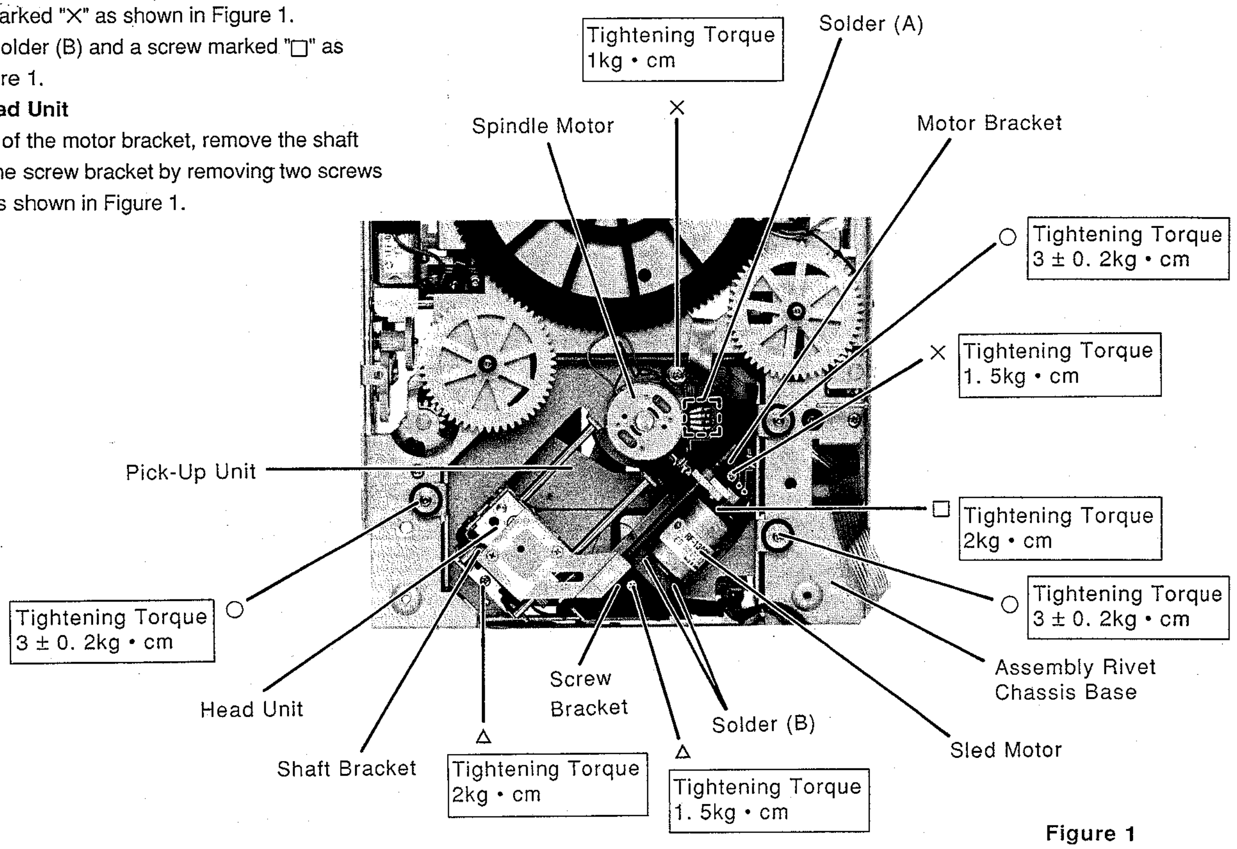

Tightening Torque
1kg • cm
Solder (A)
×
Spindle Motor
Motor Bracket
○ Tightening Torque
3 ± 0. 2kg • cm
× Tightening Torque
1. 5kg • cm
Pick-Up Unit
□ Tightening Torque
2kg • cm
○ Tightening Torque
3 ± 0. 2kg • cm
Tightening Torque
3 ± 0. 2kg • cm ○
Assembly Rivet
Chassis Base
Head Unit
Screw
Bracket
Solder (B)
Sled Motor
Shaft Bracket
△
Tightening Torque
2kg • cm
△
Tightening Torque
1. 5kg • cm

Figure 1

4. Removal of LED P. C. Board

(1) Remove two screws marked "●" as shown in Figure 2.

5. Removal of Switch P.C. Board

(1) Remove a screw marked "▲" as shown in Figure 2.

(2) Remove the hook (A) as shown in Figure 2.

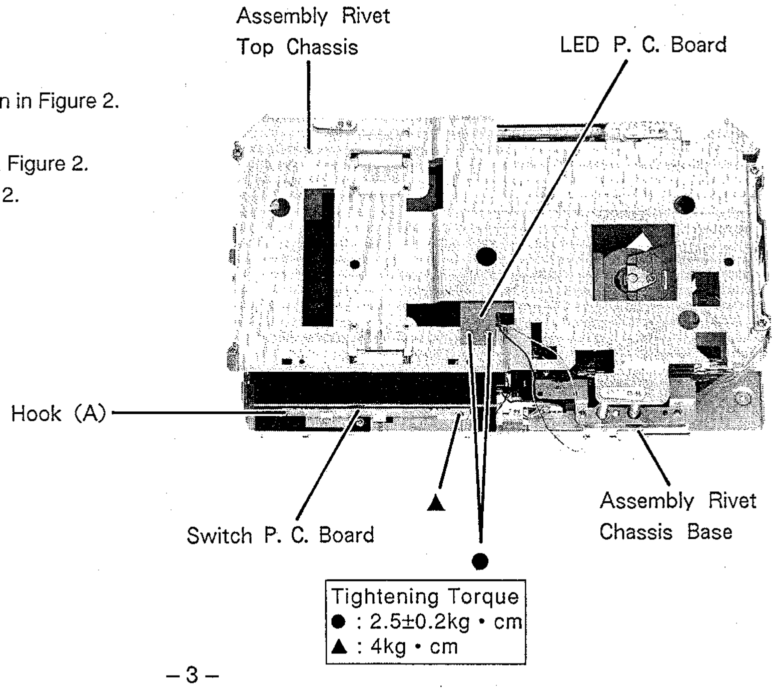

Assembly Rivet
Top Chassis
LED P. C. Board
Hook (A)
Switch P. C. Board
▲
●
Assembly Rivet
Chassis Base
Tightening Torque
● : 2.5±0.2kg • cm
▲ : 4kg • cm

Figure 2

6. Removal of Assembly Rivet Chassis CR

(1) After Remove seven screws marked "∞", remove the Assembly Rivet Top Chassis and the Assembly Rivet Chassis Base as shown in Figure 3.

7. Removal of Photo P. C. Board

(1) After picking up the Assembly Rivet Chassis CR, remove the solder (C) as shown in Figure 4.

(2) Remove a screw marked "■" as shown in Figure 4.

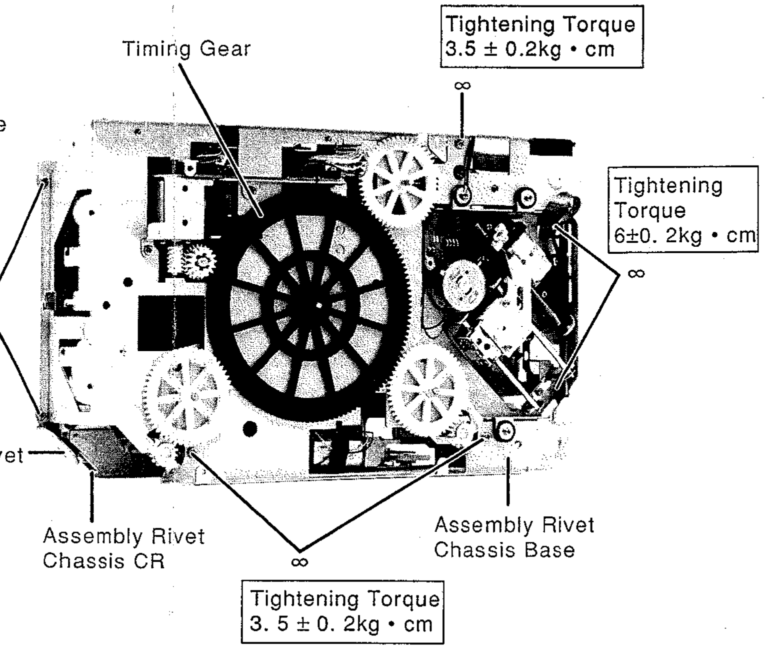

Timing Gear
Tightening Torque
3.5 ± 0.2kg • cm
∞
Tightening
Torque
6±0. 2kg • cm
∞
Tightening Torque
6 ± 0. 2kg • cm ∞
Assembly Rivet
Top Chassis
Assembly Rivet
Chassis CR
∞
Assembly Rivet
Chassis Base
Tightening Torque
3. 5 ± 0. 2kg • cm

Figure 3

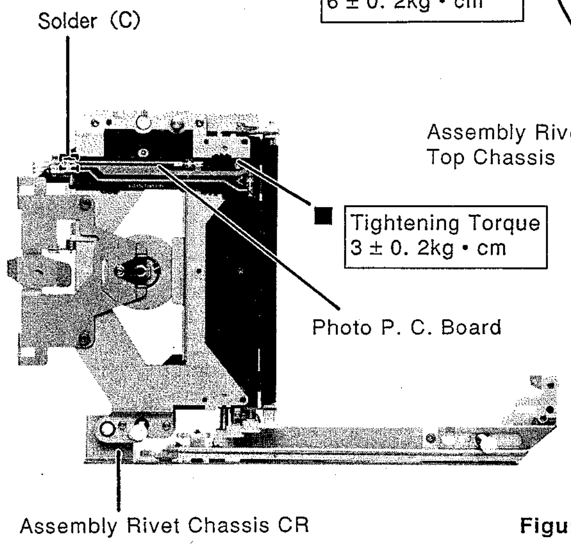

Solder (C)
■ Tightening Torque
3 ± 0. 2kg • cm
Photo P. C. Board
Assembly Rivet Chassis CR

Figure 4

8. Removal of Sensor P. C. Board

(1) After removal of the Assembly Rivet Chassis CR, remove the solder (D) and (E) as shown in Figure 5.

(2) Remove two screws marked "☆" as shown in Figure 5.

9. Removal of Loading Motor

(1) After removal of the Assembly Rivet Chassis CR, remove the solder (E) as shown in Figure 5.

(2) Remove two screws marked "★" as shown in Figure 5.

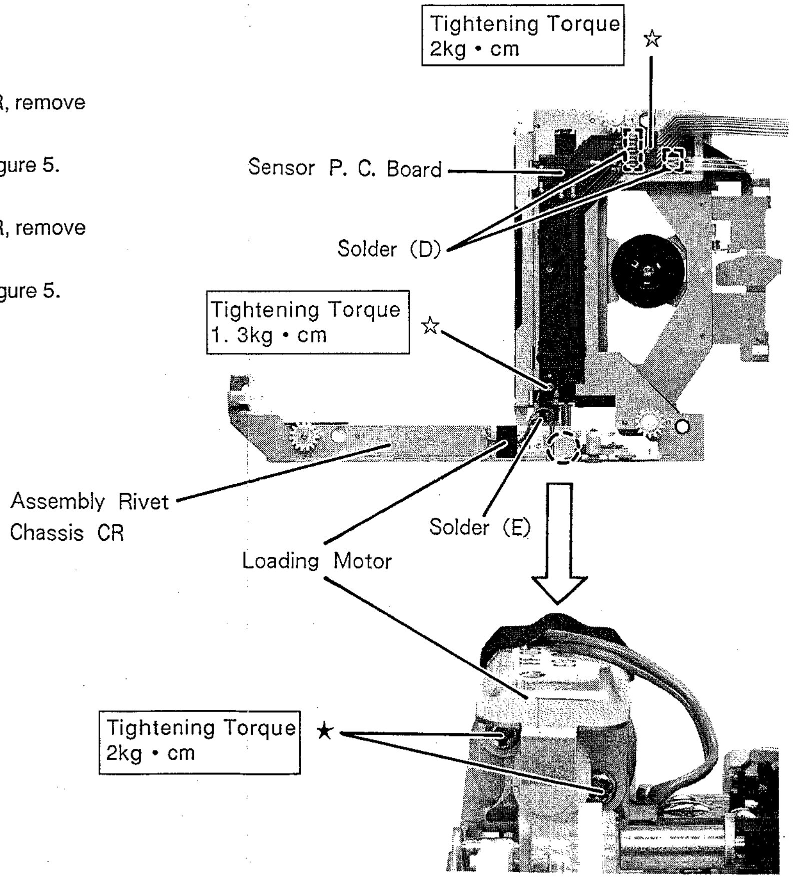

Tightening Torque
2kg • cm
☆
Sensor P. C. Board
Solder (D)
Tightening Torque
1. 3kg • cm
☆
Assembly Rivet
Chassis CR
Solder (E)
Loading Motor
Tightening Torque
2kg • cm
★

Figure 5

10. I
(1
(2
(3
(4
11. I
(1
(2
12.
(
(

6. Removal of Assembly Rivet Chassis CR

(1) After Remove seven screws marked "∞", remove the Assembly Rivet Top Chassis and the Assembly Rivet Chassis Base as shown in Figure 3.

7. Removal of Photo P. C. Board

(1) After picking up the Assembly Rivet Chassis CR, remove the solder (C) as shown in Figure 4.

(2) Remove a screw marked "■" as shown in Figure 4.

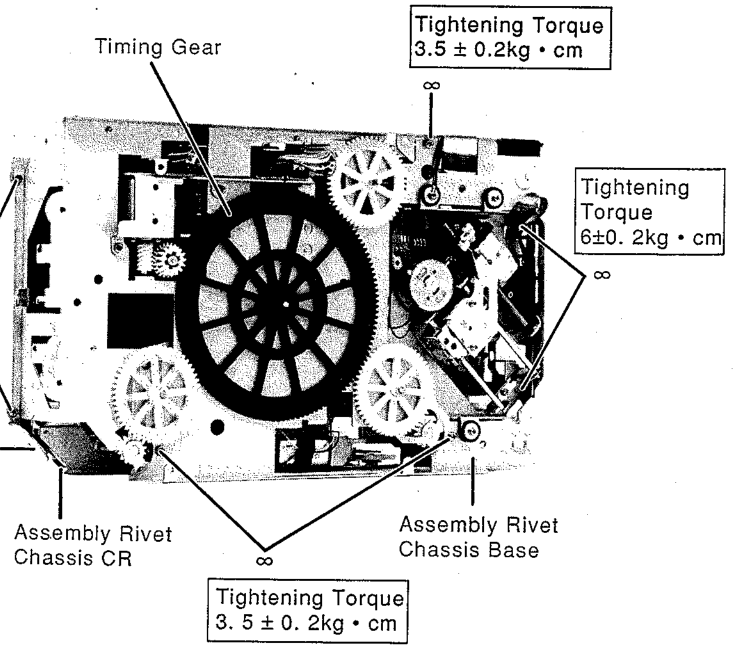

Timing Gear
Tightening Torque
3.5 ± 0.2kg • cm
∞
Tightening Torque
6±0. 2kg • cm
∞
Tightening Torque
6 ± 0. 2kg • cm
∞
Assembly Rivet
Top Chassis
Assembly Rivet
Chassis CR
∞
Tightening Torque
3. 5 ± 0. 2kg • cm
Assembly Rivet
Chassis Base

Figure 3

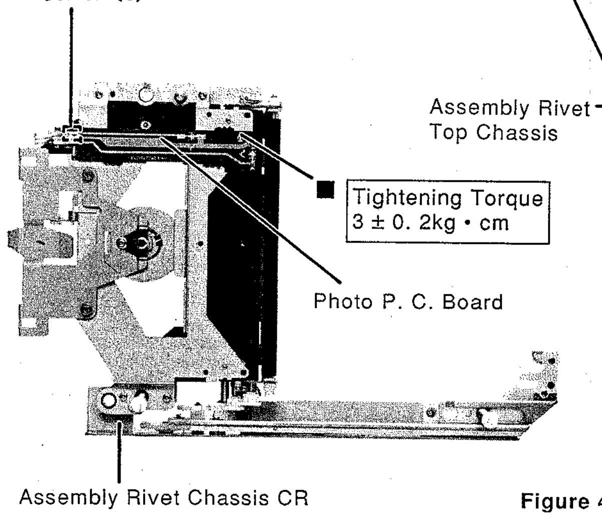

Solder (C)
■
Tightening Torque
3 ± 0. 2kg • cm
Photo P. C. Board
Assembly Rivet Chassis CR

Figure 4

8. Removal of Sensor P. C. Board

(1) After removal of the Assembly Rivet Chassis CR, remove the solder (D) and (E) as shown in Figure 5.

(2) Remove two screws marked "☆" as shown in Figure 5.

9. Removal of Loading Motor

(1) After removal of the Assembly Rivet Chassis CR, remove the solder (E) as shown in Figure 5.

(2) Remove two screws marked "★" as shown in Figure 5.

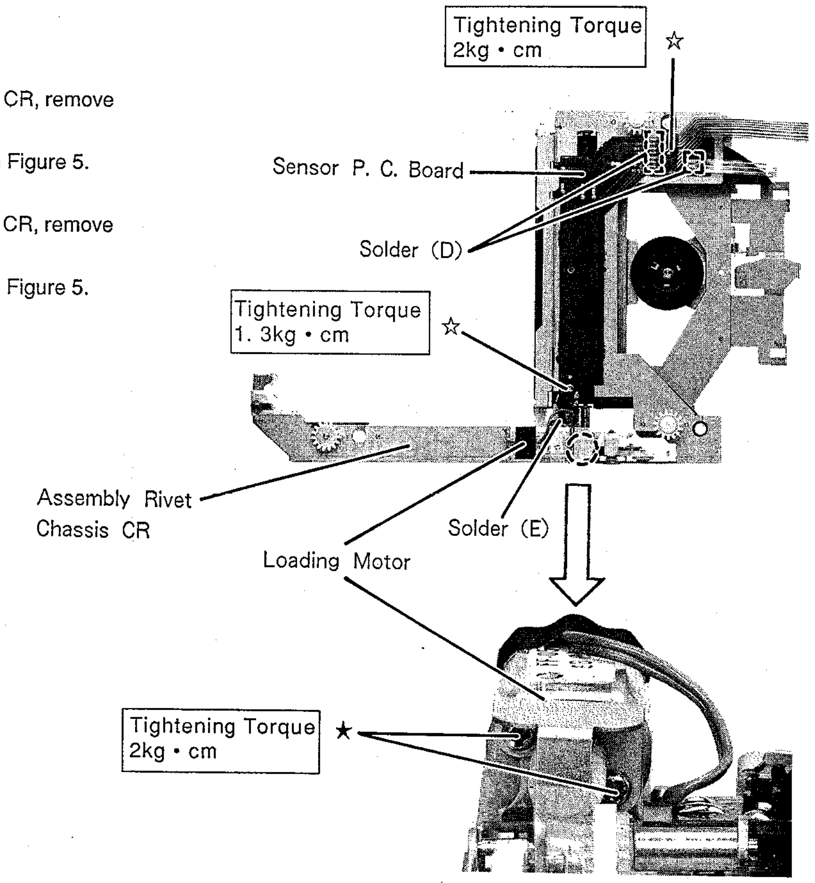

Tightening Torque
2kg • cm
☆
Sensor P. C. Board
Solder (D)
Tightening Torque
1. 3kg • cm
☆
Assembly Rivet
Chassis CR
Loading Motor
Solder (E)
Tightening Torque
2kg • cm
★

Figure 5

10. Removal of Elevator Motor

(1) After removal of the Assembly Rivet Chassis CR, remove the timing gear by removing the washer (A) as shown in Figure 6.

(2) Remove the Assembly Rivet Bracket Motor by removing two screws marked "◇" as shown in Figure 6.

(3) Remove the solder (F) as shown in Figure 7.

(4) Remove tow screws marked "◆" as shown in Figure 6.

11. Removal of Interrupt P. C. Board

(1) After removal of the Assembly Rivet Bracket Motor, remove the solder (F) as shown in Figure 7.

(2) Remove two screws marked "#" as shown in Figure 7.

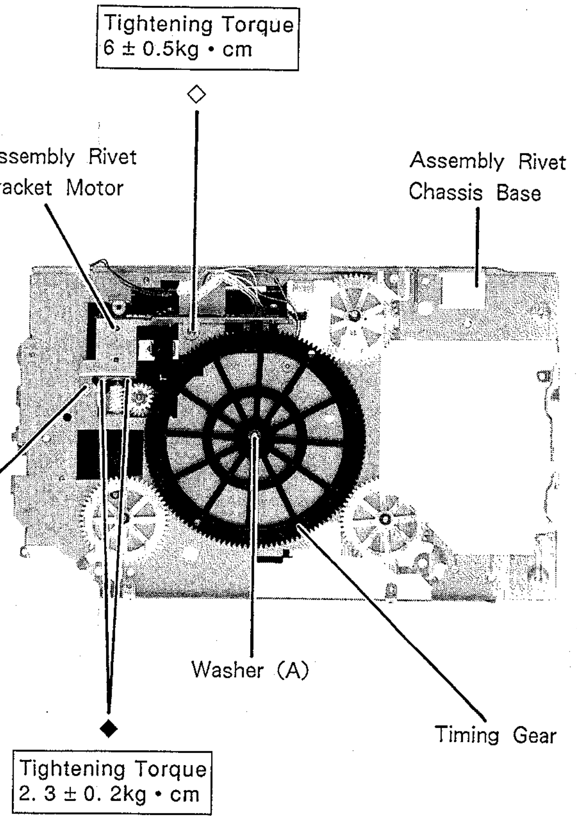

Tightening Torque
6 ± 0.5kg • cm
◇
Assembly Rivet
Bracket Motor
Assembly Rivet
Chassis Base
Tightening Torque
6 ± 0.5kg • cm
◇
Washer (A)
◆
Timing Gear
Tightening Torque
2. 3 ± 0. 2kg • cm

Figure 6

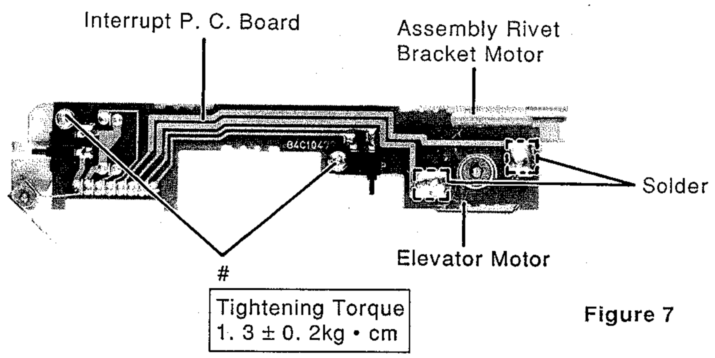

Interrupt P. C. Board
Assembly Rivet
Bracket Motor
Solder (F)
Elevator Motor
#
Tightening Torque
1. 3 ± 0. 2kg • cm

Figure 7

12. Removal of Magazine Photo P. C. Board

(1) After removal of the Assembly Rivet Chassis CR, remove the Assembly Rivet Chassis Magazine by removing three screws marked "※" as shown in Figure 8.

(2) Remove two screws marked "◎" as shown in Figure 8.

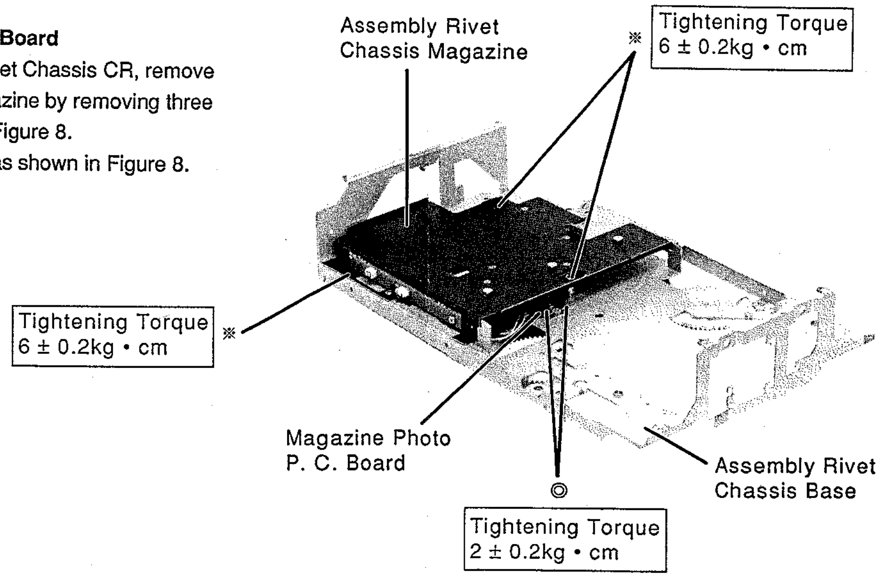
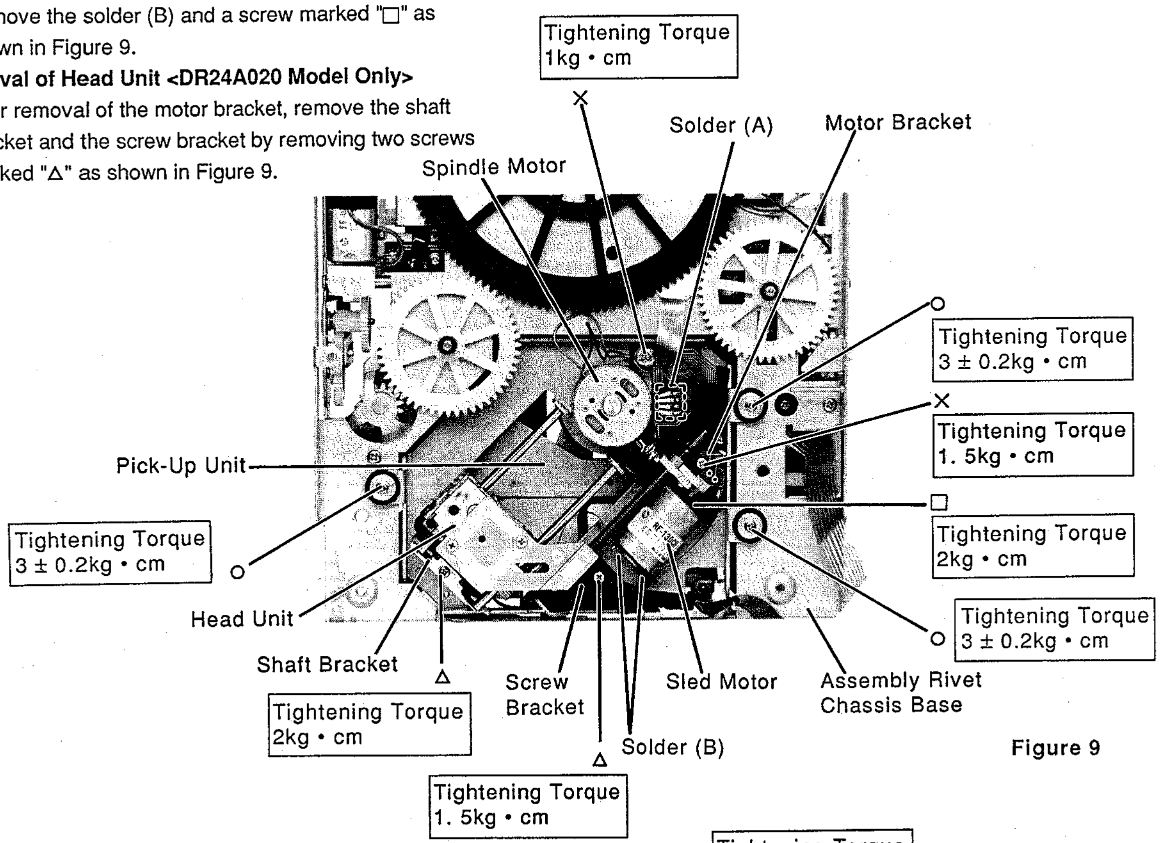

Assembly Rivet
Chassis Magazine
※
Tightening Torque
6 ± 0.2kg • cm
Tightening Torque
6 ± 0.2kg • cm
※
Magazine Photo
P. C. Board
◎
Tightening Torque
2 ± 0.2kg • cm
Assembly Rivet
Chassis Base

Figure 8

Disassembly Instructions

<DR24A020/02A/030/040 Model Only>

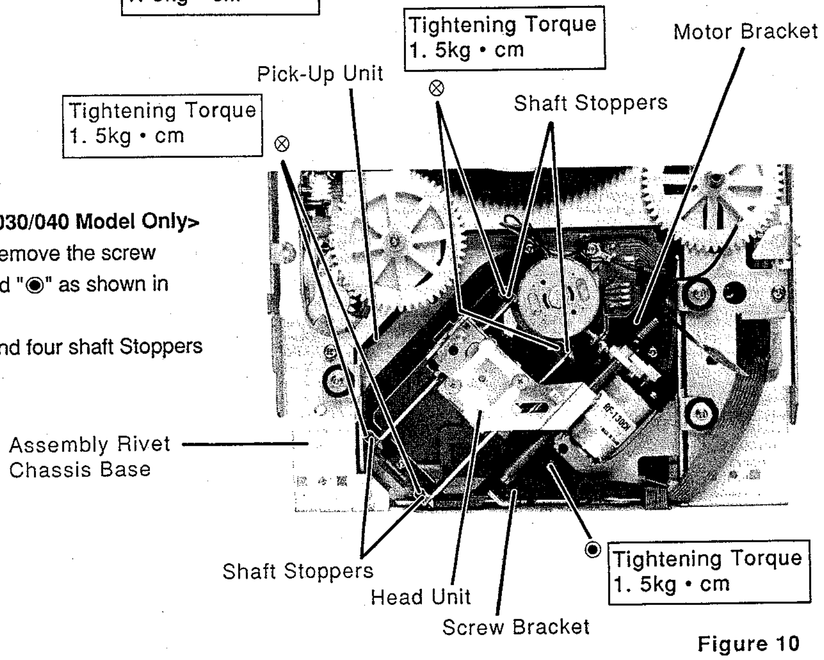
1. **Removal of Pick-Up Unit**
   (1) Remove three screws marked "O" as shown in Figure 9.
2. **Removal of Sled Motor**
   (1) After removal of the pick-up unit, remove the motor bracket with sled motor by removing the solder (A) and two screws marked "X" as shown in Figure 9.
   (2) Remove the solder (B) and a screw marked "□" as shown in Figure 9.
3. **Removal of Head Unit <DR24A020 Model Only>**
   (1) After removal of the motor bracket, remove the shaft bracket and the screw bracket by removing two screws marked "Δ" as shown in Figure 9.



Tightening Torque 1kg • cm
×
Solder (A)
Motor Bracket
Spindle Motor
O
Tightening Torque 3 ± 0.2kg • cm
×
Tightening Torque 1. 5kg • cm
Pick-Up Unit
□
Tightening Torque 2kg • cm
Tightening Torque 3 ± 0.2kg • cm
O
Head Unit
O
Tightening Torque 3 ± 0.2kg • cm
Shaft Bracket
Δ
Screw Bracket
Sled Motor
Assembly Rivet Chassis Base
Tightening Torque 2kg • cm
Δ
Solder (B)
Tightening Torque 1. 5kg • cm

Figure 9

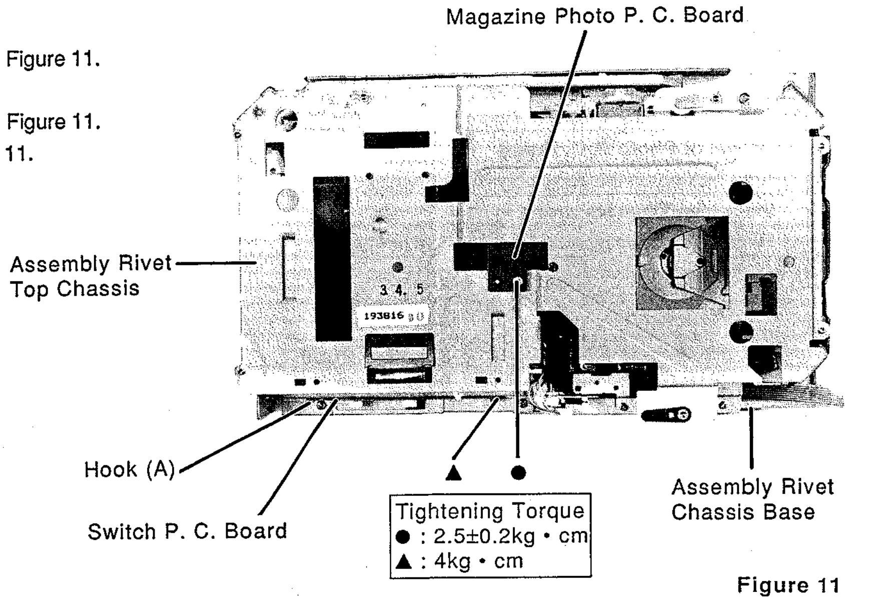
3. **Removal of Head Unit <DR24A02A/030/040 Model Only>**
   (1) After removal of the motor bracket remove the screw bracket by removing a screw marked "◉" as shown in Figure 10.
   (2) Remove four screws marked "⊗" and four shaft Stoppers as shown in Figure 10.



Tightening Torque 1. 5kg • cm
⊗
Motor Bracket
Pick-Up Unit
Shaft Stoppers
Tightening Torque 1. 5kg • cm
⊗
Assembly Rivet Chassis Base
Shaft Stoppers
Head Unit
Screw Bracket
◉
Tightening Torque 1. 5kg • cm

Figure 10

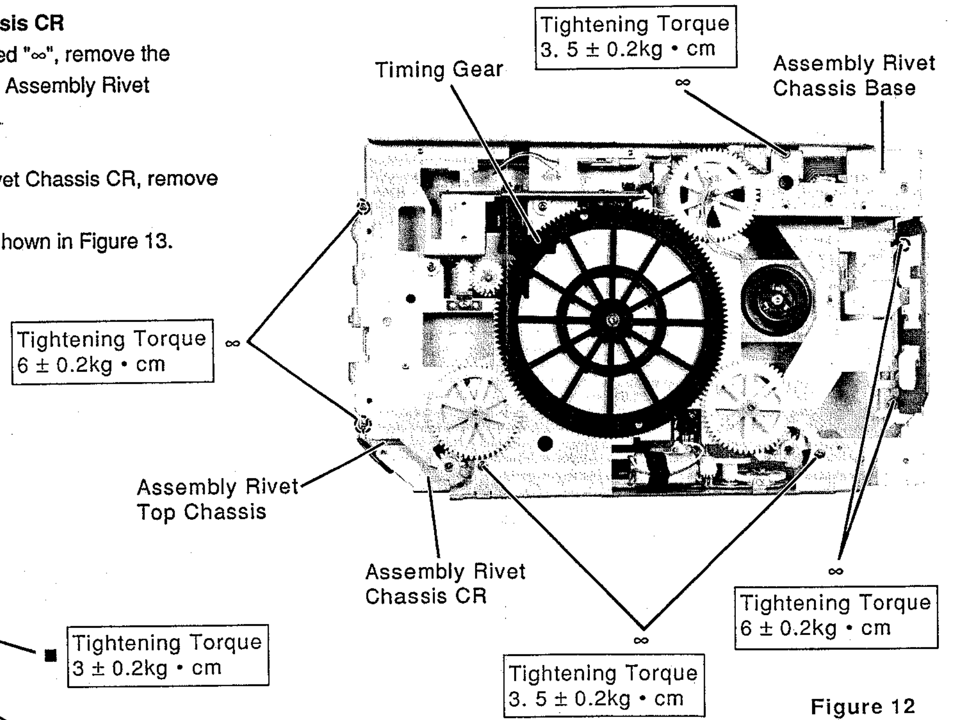
4. **Removal of Magazine Photo**
   (1) Remove a screw marked "●" as shown in Figure 11.
5. **Removal of Switch P. C. Board**
   (1) Remove a screw marked "▲" as shown in Figure 11.
   (2) Remove the Hook (A) as shown in Figure 11.



Magazine Photo P. C. Board
Assembly Rivet Top Chassis
Hook (A)
Switch P. C. Board
▲ ●
Tightening Torque
● : 2.5±0.2kg • cm
▲ : 4kg • cm
Assembly Rivet Chassis Base

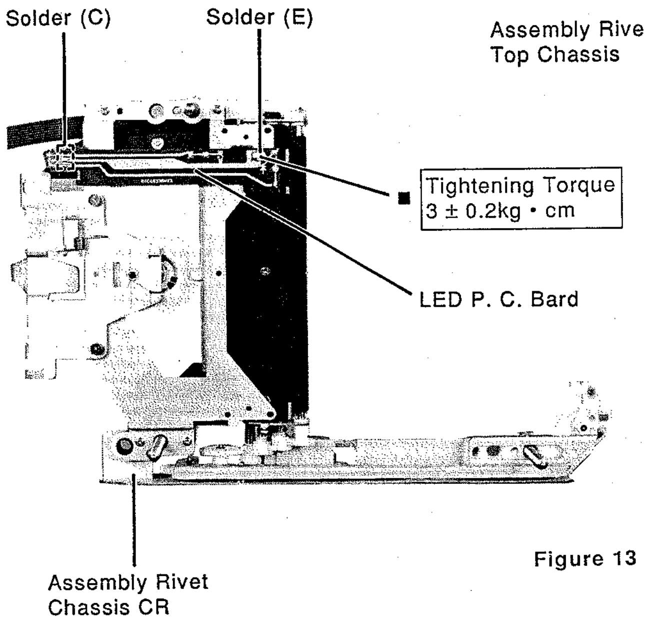
Figure 11

6. **Removal of Assembly Rivet Chassis CR**
   (1) After remove seven screws marked "∞", remove the Assembly Rivet Top Chassis and the Assembly Rivet Chassis Base as shown in Figure 12.
7. **Removal of LED P. C. Board**
   (1) After picking up the Assembly Rivet Chassis CR, remove the solder (C) as shown in Figure 13.
   (2) Remove a screw marked "■" as shown in Figure 13.



Tightening Torque 3. 5 ± 0.2kg • cm
Timing Gear
∞
Assembly Rivet Chassis Base
Tightening Torque 6 ± 0.2kg • cm
∞
Assembly Rivet Top Chassis
Assembly Rivet Chassis CR
∞
Tightening Torque 6 ± 0.2kg • cm
∞
Tightening Torque 3. 5 ± 0.2kg • cm

Figure 12



Solder (C)
Solder (E)
■
Tightening Torque 3 ± 0.2kg • cm
LED P. C. Bard
Assembly Rivet Chassis CR

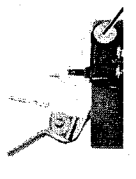
Figure 13

8. Rem
(1) Af
th
(2) R
"☆
Note: W
da
9. Rem
(1) A
th
(2) R

10. Re
(1)
t
(1)
t
(2)
t
(3)
(4)

11. Re
(1)
(2)

Tighte
1. 3 ±



Interru

4. Removal of Magazine Photo

(1) Remove a screw marked "●" as shown in Figure 11.

5. Removal of Switch P. C. Board

(1) Remove a screw marked "▲" as shown in Figure 11.

(2) Remove the Hook (A) as shown in Figure 11.

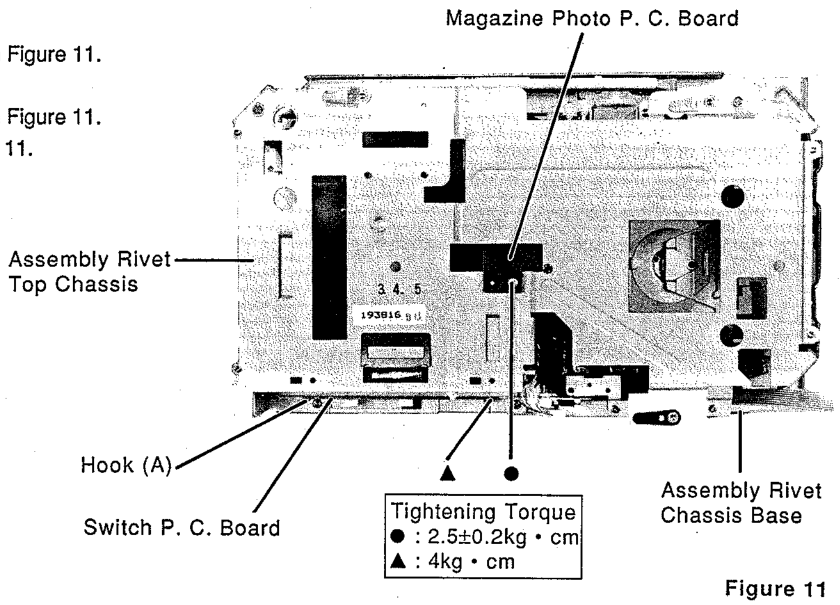

Magazine Photo P. C. Board
Assembly Rivet Top Chassis
Hook (A)
Switch P. C. Board
▲ ●
Tightening Torque
● : 2.5±0.2kg • cm
▲ : 4kg • cm
Assembly Rivet Chassis Base

Figure 11

6. Removal of Assembly Rivet Chassis CR

(1) After remove seven screws marked "∞", remove the Assembly Rivet Top Chassis and the Assembly Rivet Chassis Base as shown in Figure 12.

7. Removal of LED P. C. Board

(1) After picking up the Assembly Rivet Chassis CR, remove the solder (C) as shown in Figure 13.

(2) Remove a screw marked "■" as shown in Figure 13.

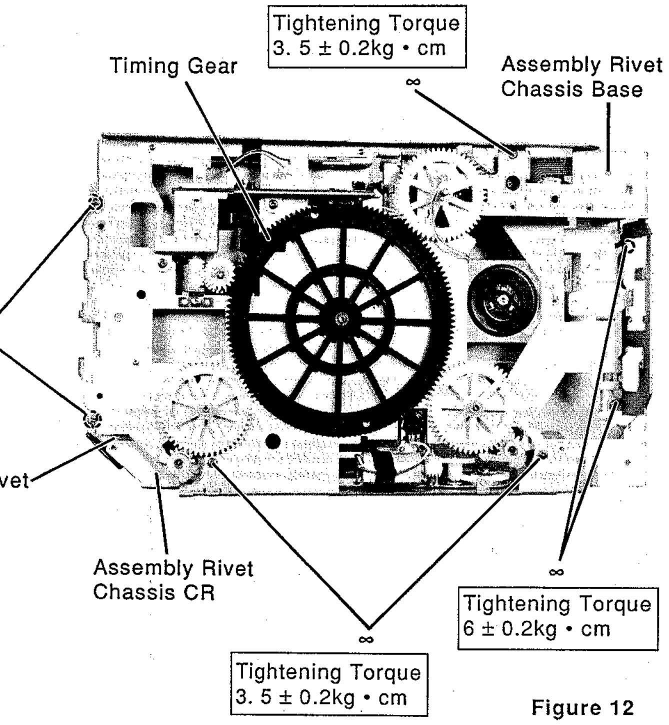

Timing Gear
Tightening Torque
3. 5 ± 0.2kg • cm
∞
Assembly Rivet Chassis Base
Tightening Torque
6 ± 0.2kg • cm
∞
Assembly Rivet Top Chassis
Assembly Rivet Chassis CR
∞
Tightening Torque
3. 5 ± 0.2kg • cm
∞
Tightening Torque
6 ± 0.2kg • cm

Figure 12

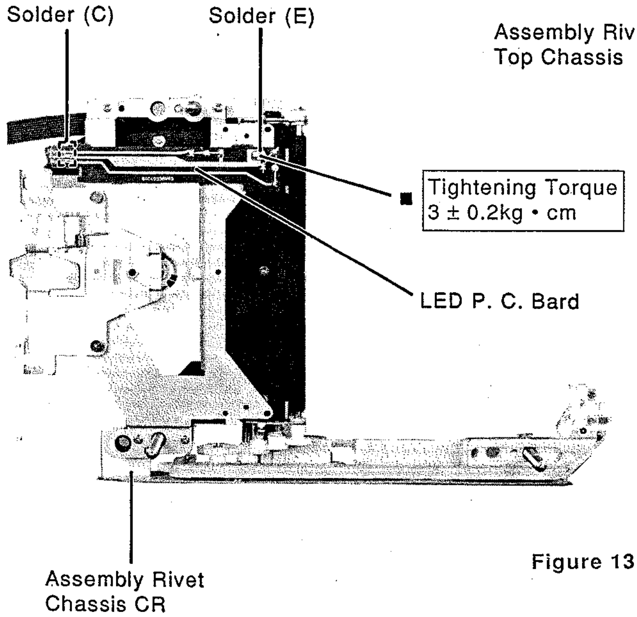

Solder (C)
Solder (E)
■
Tightening Torque
3 ± 0.2kg • cm
LED P. C. Bard
Assembly Rivet Chassis CR

Figure 13

8. Removal of Sensor P. C. Board

(1) After removal of the Assembly Rivet Chassis CR, remove the solder (E) and (F) as shown in Figure 14.

(2) Remove Elevator Screw Shaft and two screws marked "☆" as shown in Figure 14.

Note: When removing the sensor P. C. Board, be careful not to damage the Photo-Transistor.

9. Removal of Loading Motor

(1) After removal of the Assembly Rivet Chassis CR, remove the solder (F) as shown in Figure 14.

(2) Remove two screws marked "★" as shown in Figure 14.

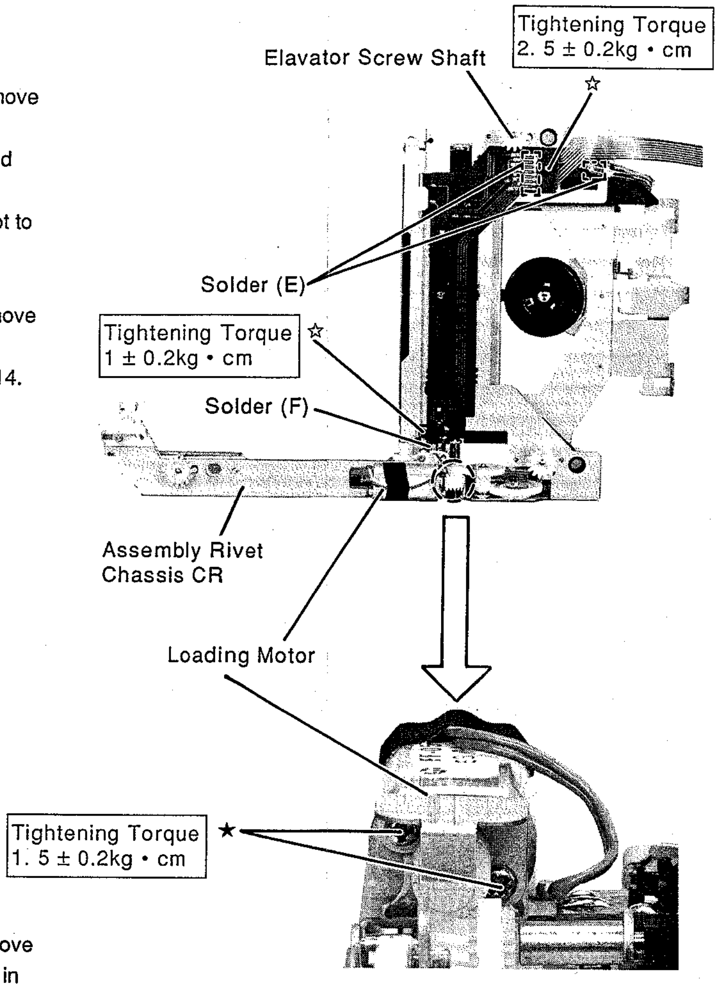

Elavator Screw Shaft
Tightening Torque
2. 5 ± 0.2kg • cm
☆
Solder (E)
Tightening Torque
1 ± 0.2kg • cm
☆
Solder (F)
Assembly Rivet Chassis CR
Loading Motor
Tightening Torque
1. 5 ± 0.2kg • cm
★

Figure 14

10. Removal of Elevator Motor

(1) After removal of the Assembly Rivet Chassis CR, remove the timing gear by removing the washer (A) as shown in Figure 15. **<DR24A020/02A Model Only>**

(1) After removal of the Assembly Rivet Chassis CR, remove the timing gear by removing the Ring "E" as shown in Figure 15. **<DR24A030/040 Model Only>**

(2) Remove the Assembly Rivet Bracket Motor by removing two screws marked "◇" as shown in Figure 15.

(3) Remove the solder (G) as shown in Figure 16.

(4) Remove two screws marked "◆" as shown in Figure 15.

11. Removal of Interrupt P. C. Board

(1) After removal of the Assembly Rivet Bracket Motor, remove the solder (G) as shown in Figure 16.

(2) Remove two screws marked "#" as shown in Figure16.

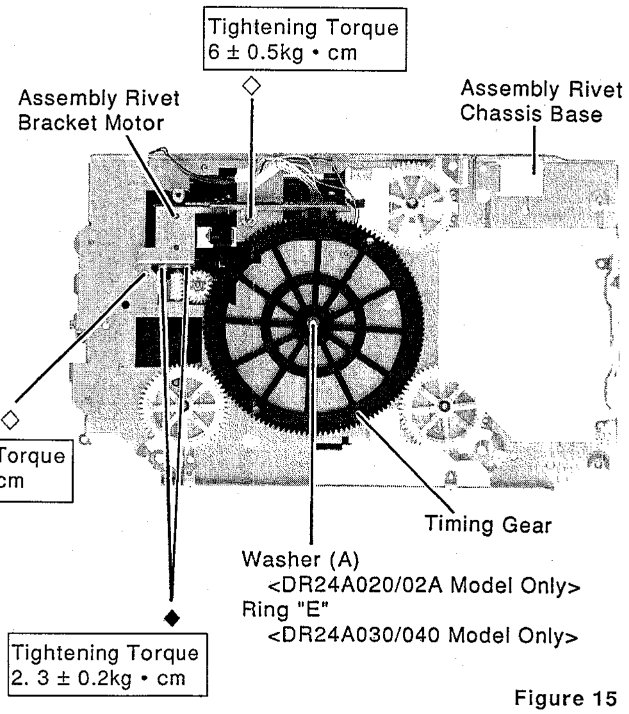

Tightening Torque
6 ± 0.5kg • cm
◇
Assembly Rivet Bracket Motor
Assembly Rivet Chassis Base
◇
Tightening Torque
6 ± 0.5kg • cm
Timing Gear
Washer (A)
<DR24A020/02A Model Only>
Ring "E"
<DR24A030/040 Model Only>
◆
Tightening Torque
2. 3 ± 0.2kg • cm

Figure 15

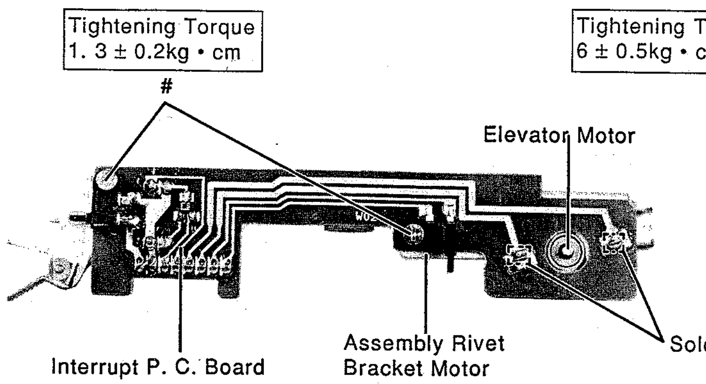

Tightening Torque
1. 3 ± 0.2kg • cm
#
Elevator Motor
Interrupt P. C. Board
Assembly Rivet Bracket Motor
Solder (G)

Figure 16

12. Removal of Magazine LED P. C. Board

(1) After removal of the Assembly Rivet Chassis CR, remove the Assembly Rivet Chassis Magazine by removing three screws marked "※" and the Hook (B) as shown in Figure 17.

(2) Remove a screw marked "◎" as shown in Figure 17.

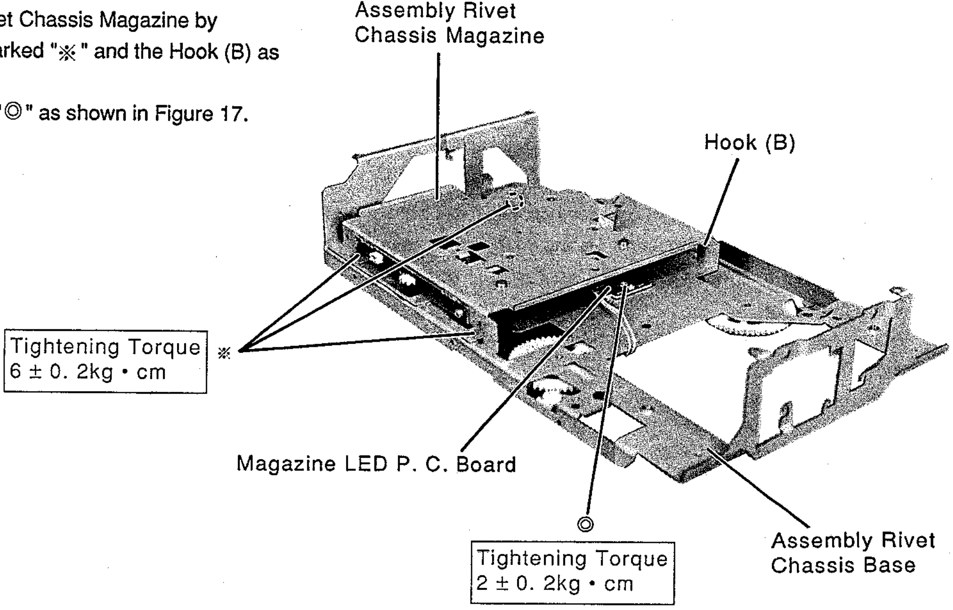

Assembly Rivet
Chassis Magazine
Hook (B)
Tightening Torque
6 ± 0. 2kg • cm
※
Magazine LED P. C. Board
◎
Tightening Torque
2 ± 0. 2kg • cm
Assembly Rivet
Chassis Base

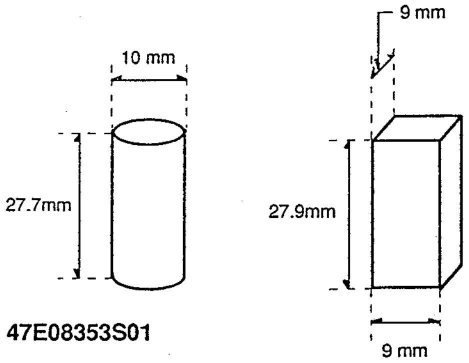
Figure 17

Adjusting method for Elevator Height

1. Remove two lock washers and a ring "E", than remove three gears (D).
2. Turn three gears (E) and move the CR chassis to F direction (to the position of CD magazine).
3. Insert the adjustment jig (☆) as shown in Figure 18 between the chassis and the CR chassis as shown in Figure 19.
   - ∗ At the same time, insert the adjustment jig near each of three gears (E).
4. Adjust each of gears (E) to minimum gap and to getting smooth moving of each adjustment jig.
5. Adjust the H hole of timing gear to fit with the hole of chassis.
6. Mount three gears (D).
   - ∗ At this time, pay attention that the position between the gear (E) adjusted and Timing gear does not make gap.
7. Fix three gears (D) with two lock washers and a ring "E".

(☆) : 47E08353S01 (DR24A010 Model Only)
01V00346S01 (DR24A020/02A/030/040 Model Only)

Adjustment Jig


10 mm
27.7mm
9 mm
27.9mm
9 mm

47E08353S01

01V00346S01
(Three pieces are supplied.)

Figure 18

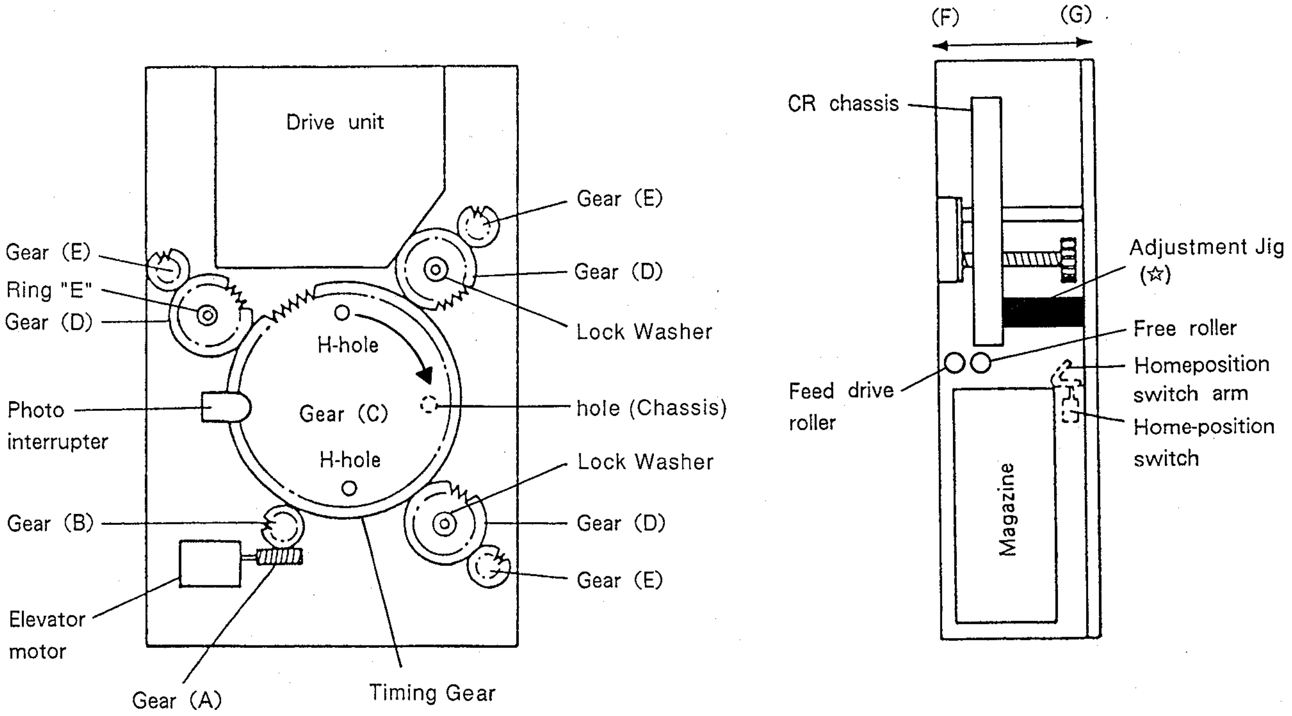

Drive unit
Gear (E)
Ring "E"
Gear (D)
Photo interrupter
Gear (B)
Elevator motor
Gear (A)
Timing Gear
H-hole
Gear (C)
H-hole
Gear (E)
Gear (D)
Lock Washer
hole (Chassis)
Lock Washer
Gear (D)
Gear (E)
(F)
(G)
CR chassis
Feed drive roller
Magazine
Adjustment Jig (☆)
Free roller
Homeposition switch arm
Home-position switch

Figure 19

Mechanism Function Description

Function	Step	Description	Illustration
Magazine Insertion	①	When the magazine is inserted, the eject lever is pushed in.	Figure 20
	②	The eject lever causes the magazine lock arm to move.	
	③	The magazine lock arm causes the magazine to lock and the magazine lock switch to be switched on.	

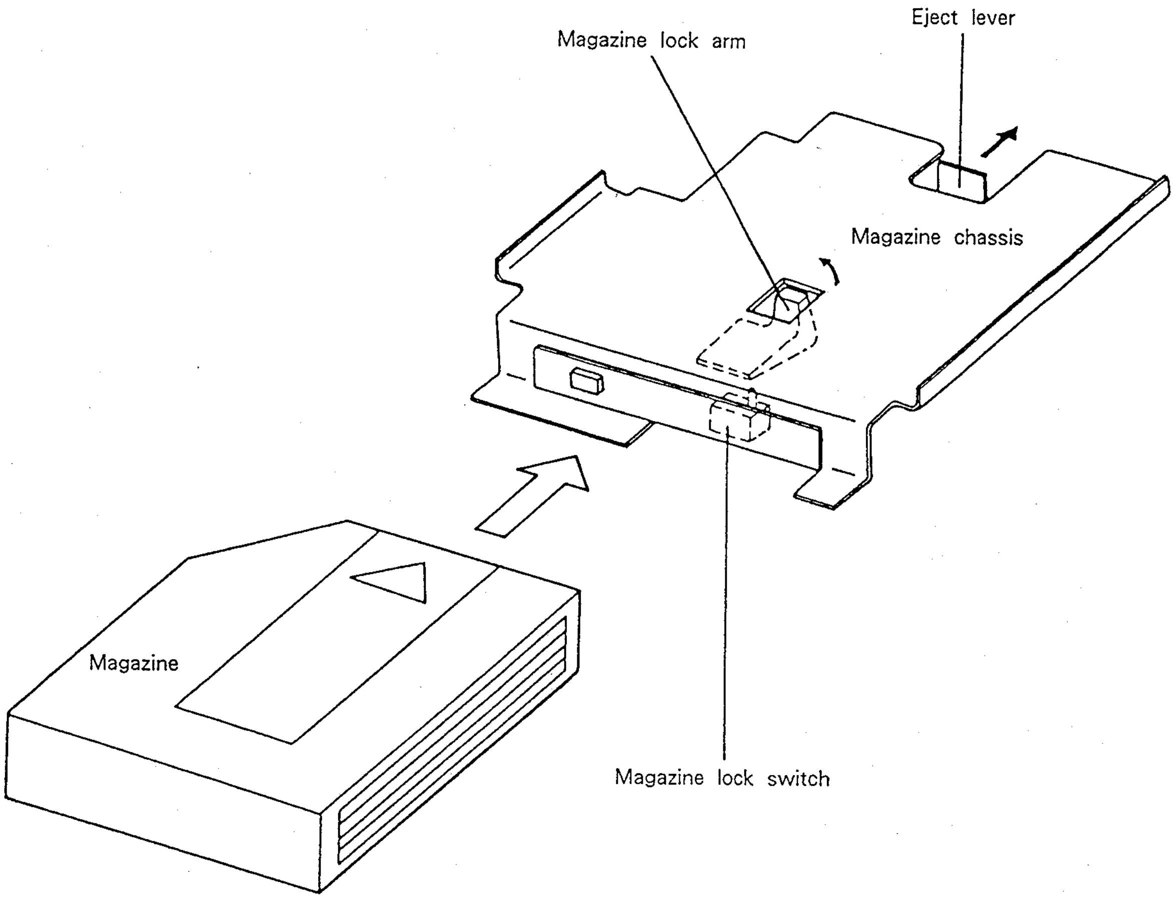

Eject lever
Magazine lock arm
Magazine chassis
Magazine
Magazine lock switch

Figure 20

Function	Step	Description	Illustration
Disc Loading	①	The elevator motor rotates.	Figure 21
	②	The rotation is transmitted to gears (A), (B), (C), (D) and (E).	
	③	The CR chassis is moved in the (F) direction by rotation of gear (E).	
	④	The photo-interrupter counts the H-holes on gear (C) to control the movement distance of the CR chassis.	
	⑤	The CR chassis is stopped at the position of the first disc in the magazine. * For the 2nd through 6th discs the movement distance of the CR chassis is the only thing that changes : the operation is the same.	
	⑥	The loading motor rotates. (The loading motor can rotate forward and in reverse.)	
	⑦	The rotation is transmitted to gears (I), (J), (K) and (L).	
	⑧	Simultaneous with the action of Step (7), the rotation is transmitted to gears (I), (J), (M), (N) and (O).	
	⑨	The rotation of gear (L) causes the disc eject lever to make a back-and-forth movement in the (P) and (Q) directions.	
	⑩	The disc eject lever causes the disc to be ejected from the magazine.	
	⑪	Since gear (O) and the feed drive roller are on the same axle, the rotation of gear (O) will cause the feed drive roller to rotate.	Figure 22
	⑫	The disc is sandwiched between the feed drive roller and the free roller and the disc moves in the direction of the clamper.	
	⑬	Photosensors (1), (2) and (3) are consecutively blocked by the disc and finally, only photosensor (3) is a blocked condition.	Figure 21
	⑭	The loading motor stops upon the judgment that the disc has entered.	
	⑮	The elevator motor rotates. (Rotation is in the opposite direction of Step (1). The elevator motor can rotate forward and in reverse.)	
	⑯	The rotation is transmitted to gears (A), (B), (C) and (D).	
	⑰	The rotation of gear (E) causes the CR chassis to move in the (G) direction.	
	⑱	The movement of the CR chassis causes the clamper to move and clamp the disc.	
	⑲	The movement of the CR chassis causes the home-position switch arm to move, and the home-position switch is switched on.	
	⑳	The photo-interrupter counts the H-holes on gear (C), and the elevator motor is stopped upon judgment that the CR chassis has reached the home position.	

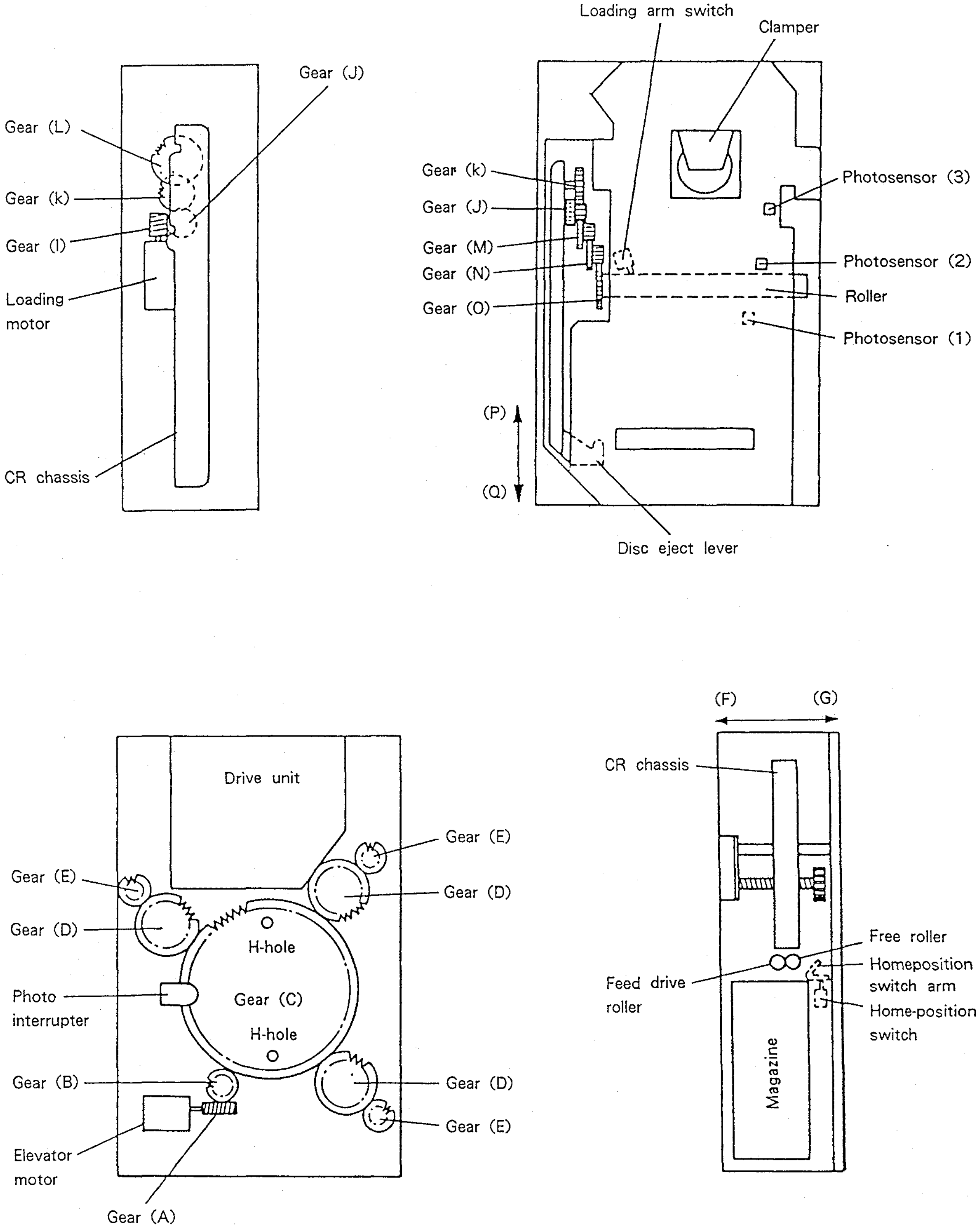

Gear (J)
Gear (L)
Gear (k)
Gear (l)
Loading
motor
CR chassis
Loading arm switch
Clamper
Gear (k)
Gear (J)
Gear (M)
Gear (N)
Gear (O)
Photosensor (3)
Photosensor (2)
Roller
Photosensor (1)
(P)
(Q)
Disc eject lever
Drive unit
Gear (E)
Gear (D)
Gear (E)
Gear (D)
H-hole
Photo
interrupter
Gear (C)
H-hole
Gear (B)
Gear (D)
Gear (E)
Elevator
motor
Gear (A)
(F)
(G)
CR chassis
Free roller
Homeposition
switch arm
Feed drive
roller
Home-position
switch
Magazine

Figure 21

Function	Step	Description	Illustration
Play	①	The spidle motor rotates the disc.	Figure 23
	②	The rotation of the sled motor is transmitted through the gears to the feed screw and causes the pickup to move.	
	③	The lead-in position of the disc is detected by the inner limit position switch and the reading of the disc data begins.	
Return of the disc to the magazine	①	The elevator motor rotates.	Figure 21
	②	The rotation is transmitted to gears (A), (B), (C), (D) and (E).	
	③	The CR chassis is moved in the (F) direction by the rotation of gear (E).	
	④	The clamper is removed.	
	⑤	The photo-interrupter counts the H-holes on gear (C) to control the movement distance of the CR chassis.	
	⑥	The disc is sandwiched between the feed drive roller and the free roller.	
	⑦	The CR chassis is stopped at the position of the first disc in the magazine. * For the 2nd through 6th disc the movement distance of the CR chassis is the only thing that changes : the operation is the same.	
	⑧	The loading motor rotates.	Figure 24
	⑨	The rotation is transmitted to gears (I), (J), (M), (N) and (O).	Figure 21
	⑩	The rotation of gear (O) causes the feed drive roller to rotate and to move in the direction of the disc magazine.	
	⑪	Blockage of photosensor (3) by the disc is cancelled.	
	⑫	The movement of the disc blocks photosensors (2) and (1) and cancels the blocking.	
	⑬	The blocking of photosensor (1) is cancelled and the disc is judged to have been housed in the magazine.	
	⑭	The loading motor stops.	

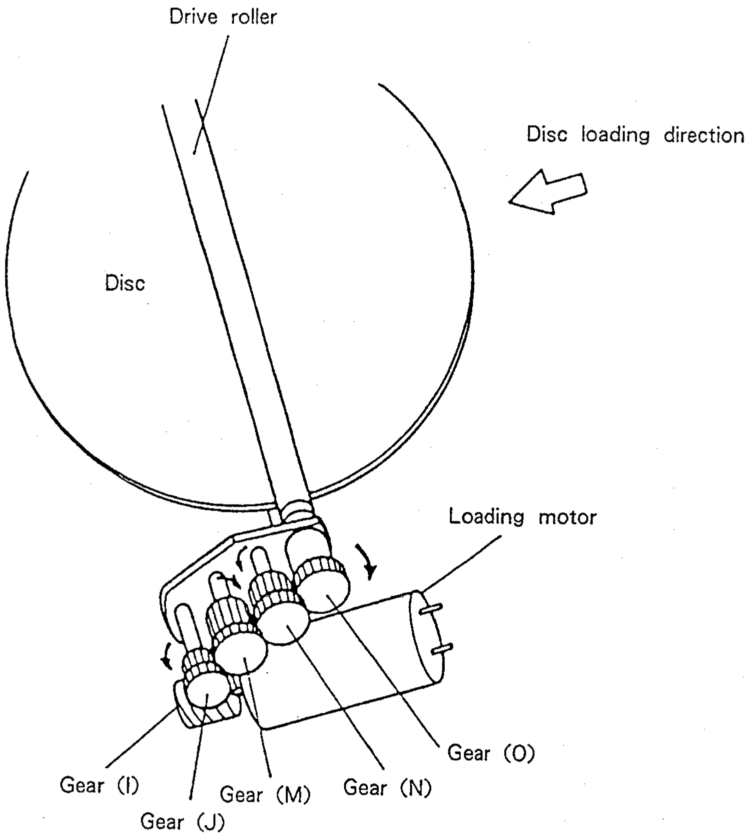

Drive roller
Disc loading direction
Disc
Loading motor
Gear (O)
Gear (I)
Gear (M)
Gear (N)
Gear (J)

Figure 22

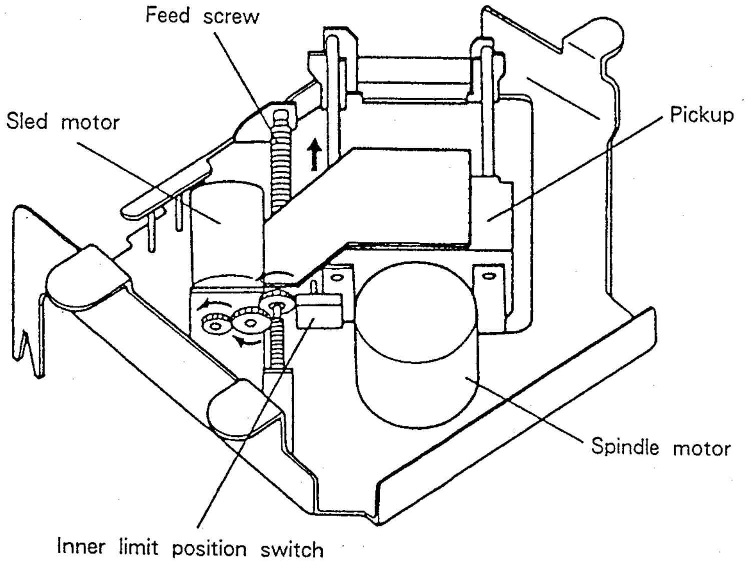

Feed screw
Sled motor
Pickup
Spindle motor
Inner limit position switch

Figure 23

Function	Step	Description	Illustration
Magazine Ejection	①	Press the eject switch.	Figure 25
	②	The elevator motor rotates.	Figure 21
	③	The rotation is transmitted to gears (A), (B), (C), (D) and (E).	
	④	The CR chassis is moved in the (G) direction by the rotation of gear (E).	
	⑤	The movement of the CR chassis causes the home-position switch arm to move, and the home-position switch is switched on.	
	⑥	The photo-interrupter counts the H-holes on gear (C), and the elevator motor is stopped upon judgment that the CR chassis has reached the home position.	
	⑦	The loading motor rotates.	
	⑧	The rotation is transmitted to gears (J), (K), and (L).	
	⑨	The rotation of gear (L) causes the disc eject lever to make a back-and-forth movement in the (P) and (Q) directions.	
	⑩	The disc eject lever causes the eject arm to move.	Figure 25
	⑪	The eject arm causes the eject lever to move, the magazine lock arm is released and the magazine is ejected.	
	⑫	The magazine lock switch is switched off and there is a judgment that the magazine has been ejected.	Figure 21

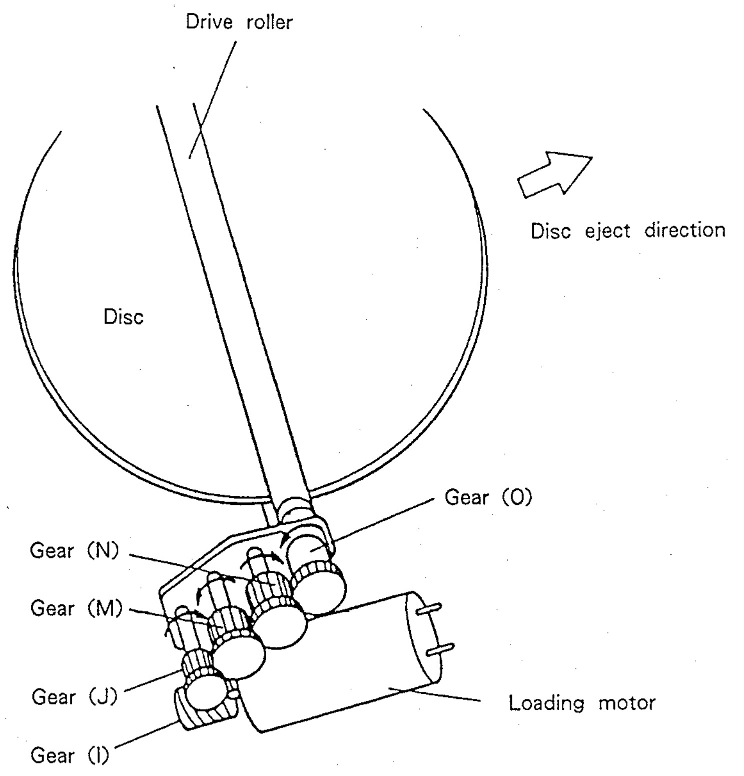

Drive roller
Disc eject direction
Disc
Gear (O)
Gear (N)
Gear (M)
Gear (J)
Gear (I)
Loading motor

Figure 24

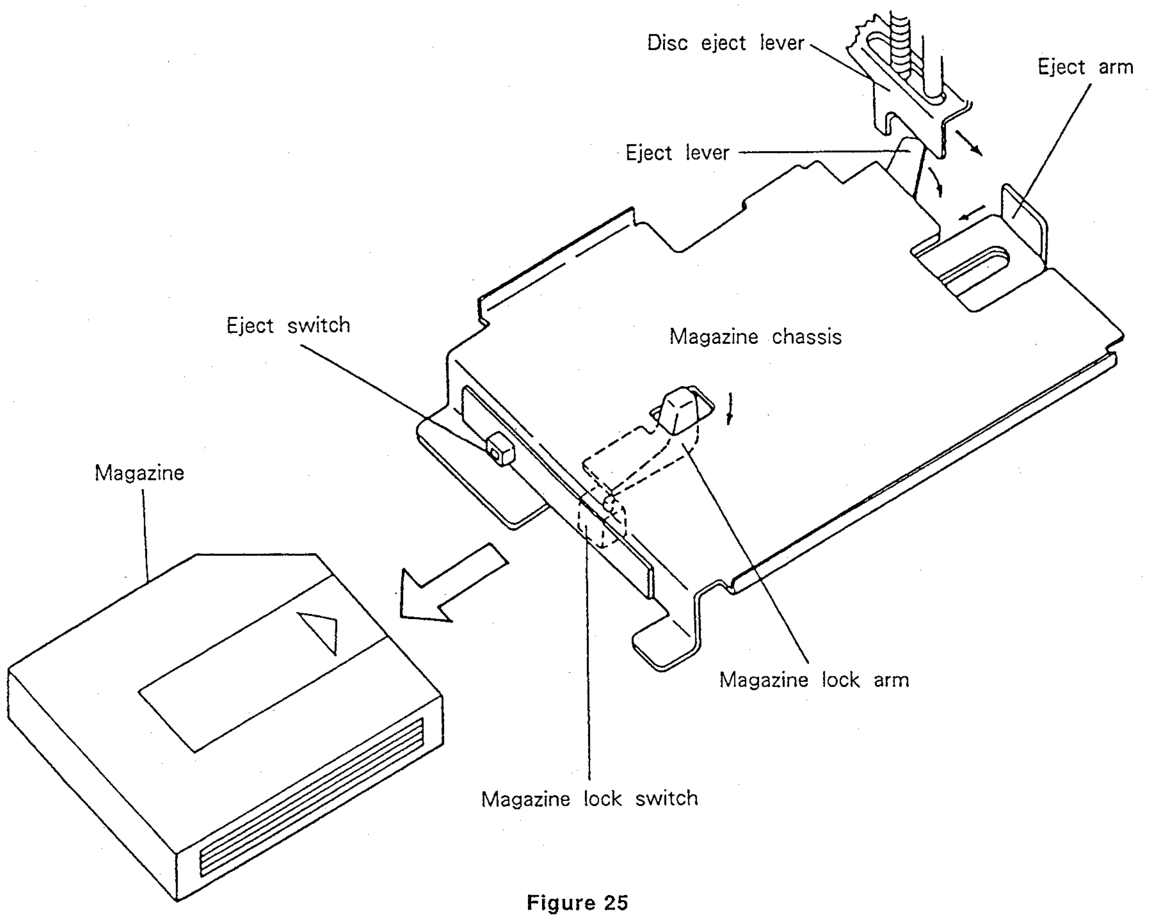
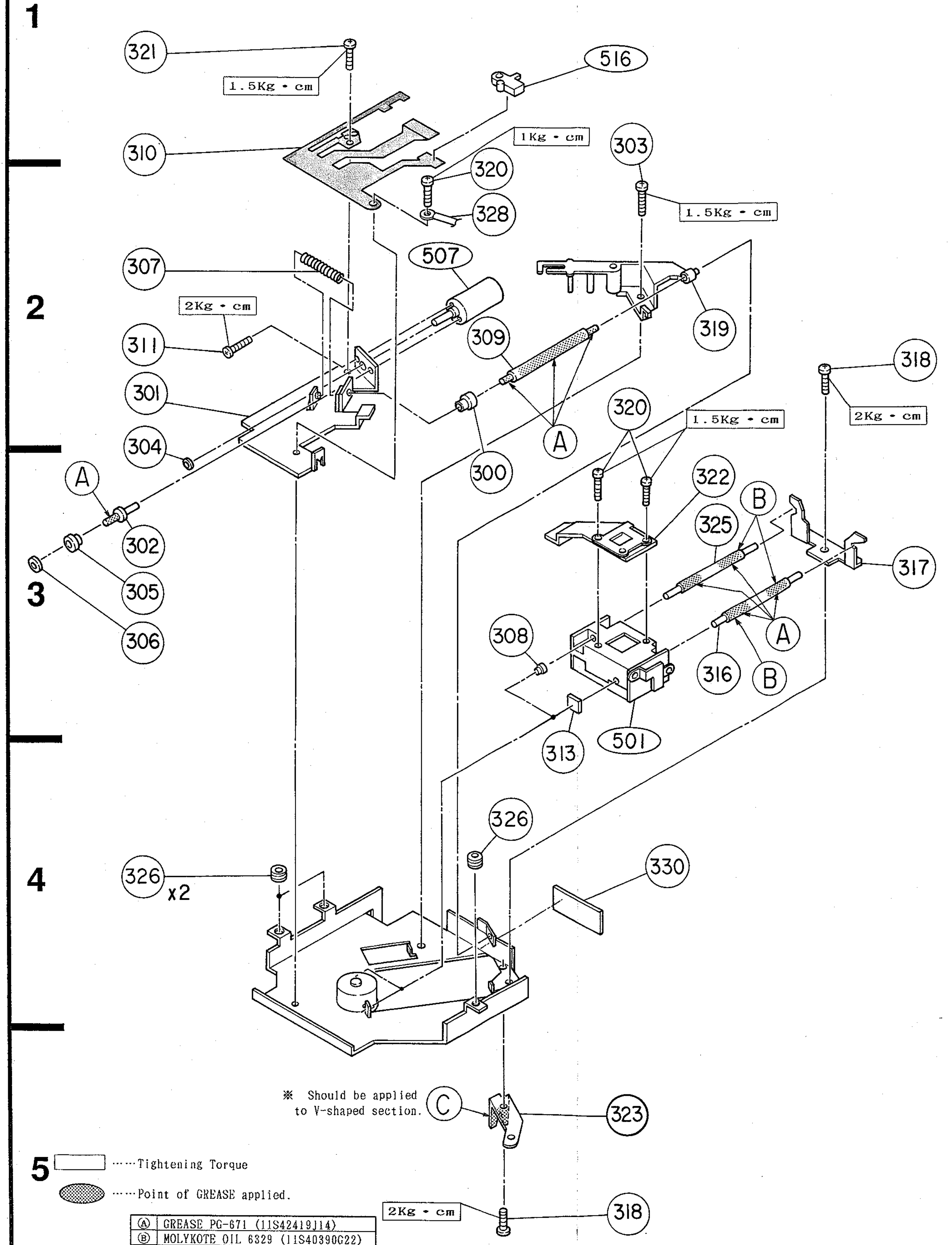

Disc eject lever
Eject arm
Eject lever
Eject switch
Magazine chassis
Magazine
Magazine lock arm
Magazine lock switch

Figure 25

Exploded View (CD Mechanism) (1/2)

- For DR24A010 Model only


1
2
3
4
5
321
1.5Kg・cm
516
310
1Kg・cm
303
320
328
1.5Kg・cm
307
507
2Kg・cm
319
311
309
301
318
320
2Kg・cm
304
A
1.5Kg・cm
300
A
322
A
B
302
325
317
305
3
306
A
308
316
B
313
501
326
4
326
x2
330
C
323
2Kg・cm
318

※ Should be applied to V-shaped section. Ⓒ

▭ ……Tightening Torque

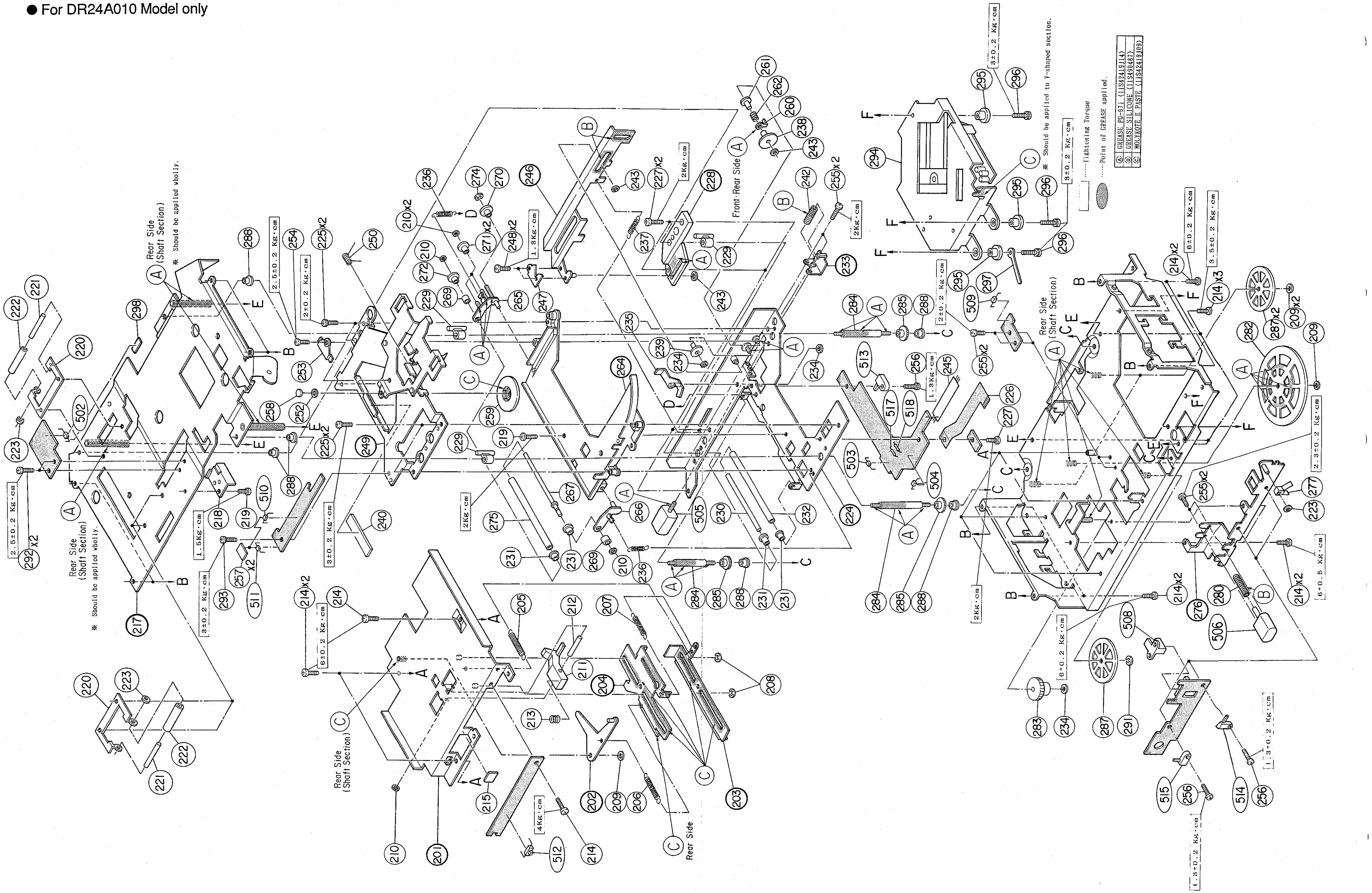
▨ ……Point of GREASE applied.

Ⓐ	GREASE PG-671 (11S42419J14)
Ⓑ	MOLYKOTE OIL 6329 (11S40390G22)
Ⓒ	MOLYKOTE E PASTE (11S42419J09)

A | B | C | D

Exploded View (CD Mechanism) (2/2)

- For DR24A010 Model only


1
2
3
4
5
A
B
C
D
E
F
G
H
Rear Side (Shaft Section)
※ Should be applied wholly.
※ Should be applied to V-shaped section.
Front·Rear Side
Rear Side
3±0.2 Kg·cm ……Tightening Torque
……Point of GREASE applied.
Ⓐ GREASE PG-671 (11S42419J14)
Ⓑ GREASE SILICONE (11S490487)
Ⓒ MOLYKOTE E PASTE (11S42419J09)
2.5±0.2 Kg·cm
2±0.2 Kg·cm
1.8Kg·cm
2Kg·cm
1.5Kg·cm
3±0.2 Kg·cm
6±0.2 Kg·cm
3.5±0.2 Kg·cm
2.3±0.2 Kg·cm
6±0.5 Kg·cm
1.3±0.2 Kg·cm
1.8±0.2 Kg·cm
4Kg·cm
201
202
203
204
205
206
207
208
209
209x2
210
210x2
211
212
213
214
214x2
214x3
215
217
218
219
220
221
222
223
224
225x2
226
227
227x2
228
229
230
231
232
233
234
235
236
237
238
239
240
242
243
245
246
247
248x2
249
250
252
253
254
255x2
256
257
258
259
260
261
262
264
265
266
267
269
270
271x2
272
274
275
276
277
280
282
283
284
285
287
287x2
288
291
292x2
293
294
295
296
297
298
502
503
504
505
506
508
509
510
511
512
513
514
515
517
518
A
B
C
D
E
F

CD Mechanism Assembly Parts List

<For DR24A010 Model Only>

Symbol No.	Index	Part No.	Description		
205	4-D	41B11514W04	Spring, Extension		
206	5-D	41B11514W05	Spring, Extension		
207	4-D	41B11514W06	Spring, Extension		
208	4-E	04C42091G02	Ring, "E" (M3. 2)		
209		04B41345P04	Washer, Lock (M2. 6)		
210		04B41345P02	Washer, Lock (M1. 7)		
211	4-D	45A11483W01	Arm, Lock Magazine		
212	4-D	47A11405W01	Shaft, Arm Lock		
213	4-D	41A11480W02	Spring, Compression		
214		03S44205G30	Screw, Pan (M2. 6 × 4)		
215	5-C	14S20875W87	Insulator, Cover		
218	3-B	43A13109W01	Spacer, Magazine		
219		03S44205G87	Screw, Pan (M2 × 4)		
220		41A11425W01	Spring, M. Hold		
221		47A11428W01	Roller, M. Hold		
222		47A11429W01	Shaft, Roller		
223		04B41345P01	Washer, Lock (M1. 2)		
225		03S40014G15	Screw, W/Washer (M2 × 8)		
226	3-F	84T11243W01	FPC Elevator P. C. Board		
227		03S40014G61	Screw, W/Washer (M2 × 5)		
229		45A11284W01	Arm, Elevator		
230	3-E	47A11273W01	Shaft, Roller Under		
231		43A11272W01	Bush, Roller		
232	3-E	75A11925W01	Rubber, Roller		
234		04B41345P13	Washer, Lock (M1. 7)		
235	2-D	01A11565W01	Assy., Rivet Arm Switch DL		
236		41B11514W08	Spring, Extension		
237	2-D	41B11514W02	Spring, Extension		
238	2-E	44A11481W01	Gear, Lever Middle		
239	3-D	44B22139W01	Gear, Lever		
240	3-C	75A96179F01	Sheet, Support Disc		
242	2-E	44A11281W01	Worm		
243		04B41345P22	Washer, Lock (M2. 6)		
245	3-F	30T73687F17	Parallel, Wire (3P)		
247	2-D	45A11441W01	Arm, Block A Magazine		
248	2-D	03S94385F01	Screw, Pan (M1. 7 × 2. 3)		
250	2-C	41A11559W01	Spring, Torsion		
252	3-B	04B41345P24	Washer, Lock (M2. 1)		
253	3-B	07A11468W01	Plate, Top		
254	2-B	03S44205G94	Screw, Pan (M1. 7 × 2)		
255		03S40014G62	Screw W/Washer (M2 × 3)		
256		03S10042W06	Screw, Pan (M2 × 7)		
257	4-B	75S72374F97	Cushion, Rubber		
258	3-B	43A41006F01	Spacer, Polyslider		
259	3-C	01A31486W01	Assy., Rivet Clamper		
260	1-E	45A31789W01	Arm, Kick Gear		
261	1-E	43A11485W01	Bush, Gear		
262	1-E	41A11480W01	Spring, Compression		
265	2-D	01A11566W01	Assy., Rivet Arm Roller		
266	3-D	01A11567W01	Assy., Rivet Arm Roller (R)		
267	3-D	47A11274W01	Shaft, Roller		
269		47A11302W01	Roller, Lifter		
270	2-C	44A11278W01	Worm		
271	2-C	44A11279W01	Gear, Roller Middle		
272	2-C	44A11280W01	Gear, Loading Roller		
274	2-C	04C42091G06	Ring, "E" (M1. 5)		
275	3-C	75A11925W01	Rubber, Roller		
277	3-H	45A11265W01	Arm, Switch HP		
280	4-G	44A11276W01	Worm		
282	2-H	44B11283W01	Gear, Timing		
283	4-F	44A11275W01	Worm Wheel		
284		47A12135W01	Shaft, Screw Elevator		
285		44A11277W01	Gear, Screw		
287		44B11282W01	Gear, Idle		
288		43A11271W01	Bearing, Screw Elevator		
291	4-G	04C42091G11	Ring, "E" (M2. 5)		
292	4-A	03S94385F09	Screw, Pan (M2 × 3)		
293	4-B	03S44205G99	Screw, Bind (M2 × 3)		
294	2-F	01V21800W05	Assy., Drive Unit		
295		43A12211W01	Sleeve, Cushion		

NOTE : The parts without part numbers are not supplied.

Symbol No.	Index	Part No.	Description		
296		03S38013W10	Screw, Pan (M2 × 7)		
297	2-F	29C41045P09	Lug, Wrap Around		
298	2-A	75A20928W01	Rubber, Top Chassis		
300	3-B	44A90998F01	Gear, Screw		
301	2-A	07C10922W02	Bracket, Motor		
302	3-A	46A91007F02	Stud, Gear		
303	1-C	03S40014G07	Screw, W/Washer (M2 × 4)		
304	2-A	44A90996F01	Gear, Motor		
305	3-A	44A90997F01	Gear, Middle		
306	3-A	04B41345P02	Washer, Lock (M1. 7)		
307	2-A	41A10928W03	Spring, Shaft-150		
308	3-B	43A13508W01	Spacer, Shaft		
309	2-B	47A10927W01	Shaft, Screw		
310	1-A	84T15149W01	FPC Actuate P. C. Board		
311	3-A	03S40014G66	Screw, W/Washer (M2 × 3. 5)		
313	4-C	75A21138W01	Sheet, Shaft		
316	3-C	47A20146W01	Shaft, Pick-Up-50°		
317	3-D	07A10921W01	Bracket, Shaft		
318		03S40014G62	Screw, W/Washer (M2 × 3)		
319	2-C	07B10923W01	Bracket, Screw		
320		03D40121T38	Screw, W/Double Washer (M2 × 5)		
321	1-A	03S40014G69	Screw, W/Washer (M2 × 8. 5)		
322	3-C	41C10925W02	Spring, Nut		
325	3-C	47A21175W01	Shaft, Pick-Up -50°(B)		
326		75A12210W01	Rubber, Cushion		
328	2-B	01T70458F02	Assy., GND Wire		
330	4-C	14S81482F10	Insulator, Cover		

Symbol No.	Index	Part No.	Description		
Miscellaneous					
501	3-C	88T15309W01	Pick-Up SF-87. 5		
502	3-A	48T16057W01	LED, AN501 (RED)		
503	3-E	48T16057W02	LED, AN501-B1 (RED)		
504	3-F	48T16057W02	LED, AN501-B1 (RED)		
505	3-E	59T90879F01	Motor, Load 6V-260mA (LOADING)		
506	4-G	59T15716W01	Motor, Load 8V-330mA (ELEVATOR)		
507	2-C	59T52973F03	Motor, Servo 6V-210mA (SLED)		
508	4-G	48T15722W01	Interrupter Photo, GP1S51		
509	2-F	48T15938W02	TR., Photo PS5022		
510	3-B	48T15938W02	TR., Photo PS5022		
511	4-B	48T15938W02	TR., Photo PS5022		
512	5-D	40T10876W12	Switch, Tact SKHLAJ (EJECT)		
513	3-E	40T71025F01	Switch, Detector (LOADING)		
514	5-H	40T71025F01	Switch, Detector (HOME POSITION)		
515	5-G	40T71025F01	Switch, Detector (MAGAZINE)		
516	1-C	40T71025F01	Switch, Detector (LIMIT)		

NOTE : The parts without part numbers are not supplied.

CD Mechanism Assembly Parts List

<For DR24A020 Model Only>

Symbol No.	Index	Part No.	Description		
205	4-D	41B11514W04	Spring, Extension		
206	5-D	41B11514W05	Spring, Extension		
207	4-D	41B11514W06	Spring, Extension		
208	4-E	04B41345P39	Washer, Lock (M3. 5)		
209		04B41345P04	Washer, Lock (M2. 6)		
210		04B41345P02	Washer, Lock (M1. 7)		
211	4-D	45A11483W01	Arm, Lock Magazine		
212	4-D	47A11405W01	Shaft, Arm Lock		
213	4-D	41A11480W02	Spring, Compression		
214		03S44205G30	Screw, Pan (M2. 6 × 4)		
215		04C42091G06	Ring, "E" (M1. 5)		
218		03S44205G99	Screw, Bind (M2 × 3)		
219	3-C	03S44205G87	Screw, Pan (M2 × 4)		
220		43A11271W01	Bearing, Screw Elevator		
221		44B11282W01	Gear, Idle		
222		44A11277W01	Gear, Screw		
223		04B41345P01	Washer, Lock (M1. 2)		
225		03S38013W07	Screw, Pan (M2 × 8. 5)		
226	3-F	84T11243W01	EPC Elevator P. C. Board		
227		03S44205G95	Screw, Bind (M2 × 4)		
229		45A11284W01	Arm, Elevator		
230	3-E	01A40510W01	Assy., Shaft Roller Under		
231		43A11272W01	Bush, Roller		
232	4-G	04C42091G11	Ring, "E" (M2. 5)		
233		47A12135W01	Shaft, Screw Elevator		
234		04B41345P13	Washer, Lock (M1. 7)		
235	3-D	01A11565W01	Assy., Rivet Arm Switch		
236		41B11514W08	Spring, Extension		
237	2-D	41B11514W02	Spring, Extension		
238	2-E	44A11481W01	Gear, Lever Middle		
239	2-E	44B22139W01	Gear, Lever		
240	4-F	41A31495W01	Spring, Elevator		
242	2-E	44A11281W01	Worm		
243	2-E	04B41345P22	Washer, Lock (M2. 6)		
245	3-F	30T73687F17	Wire, Parallel (3P)		
247	2-D	45A11441W01	Arm, Block A Magazine		
248	2-D	03S94385F01	Screw, Pan (M1.7 × 2. 3)		
250	2-C	41A11559W01	Spring, Torsion		
252	3-B	04B41345P24	Washer, Lock (M2. 1)		
253	3-B	07A31787W01	Plate, Top		
254	2-B	03S44205G94	Screw, Pan (M1.7 × 2)		
255		03S40014G62	Screw, W/Washer (M2 × 3)		
256		03S10042W06	Screw, Pan (M2 × 7)		
257	2-G	29C41045P09	Lug, Wrap Around		
258	3-B	43A41006F01	Spacer, Polyslider		
259	3-C	01A31782W01	Assy., Rivet Clamper		
260	2-E	45A31789W01	Arm, Kick Gear		
261	2-E	43A11485W01	Bush, Gear		
262	2-E	41A11480W01	Spring, Compression		
265	2-D	01A31779W01	Assy., Rivet Arm Roller (L)		
266	3-D	01A31780W01	Assy., Rivet Arm Roller (R)		
267	3-D	01A40509W01	Assy., Shaft Roller		
268	4-F	44A11275W01	Worm, Wheel		
269		47A11302W01	Roller, Lifter		
270	2-C	44A11278W01	Worm		
271	2-C	44A11279W01	Gear, Roller Middle		
272	2-C	44A11280W01	Gear, Loading Roller		
273		03S38013W10	Screw, Pan (M2 × 7)		
274	2-G	44B11283W01	Gear, Timing		
275		43A12211W01	Sleeve, Cushion		
277	3-H	45A31790W01	Arm, Switch HP		
278	2-F	01V21800W05	Assy., Drive Unit		
280	4-G	44A11276W01	Worm		
282	3-C	43A41006F01	Spacer, Polyslider		
283		03S40014G12	Screw, W/Washer (M2.6 × 4)		
284		41A11425W01	Spring, M. Hold		
285		47A11428W01	Roller, M. Hold		
286		47A11429W01	Shaft, Roller		
287		03S44205G96	Screw, Bind (M2 × 5)		
300	3-B	44A90998F01	Gear, Screw		
301	2-A	07C10922W02	Bracket, Motor		
302	3-A	46A91007F02	Stud, Gear		
303	2-C	03S40014G07	Screw, W/Washer (M2 × 4)		
304	2-A	44A90996F01	Gear, Motor		
305	3-A	44A90997F01	Gear, Middle		

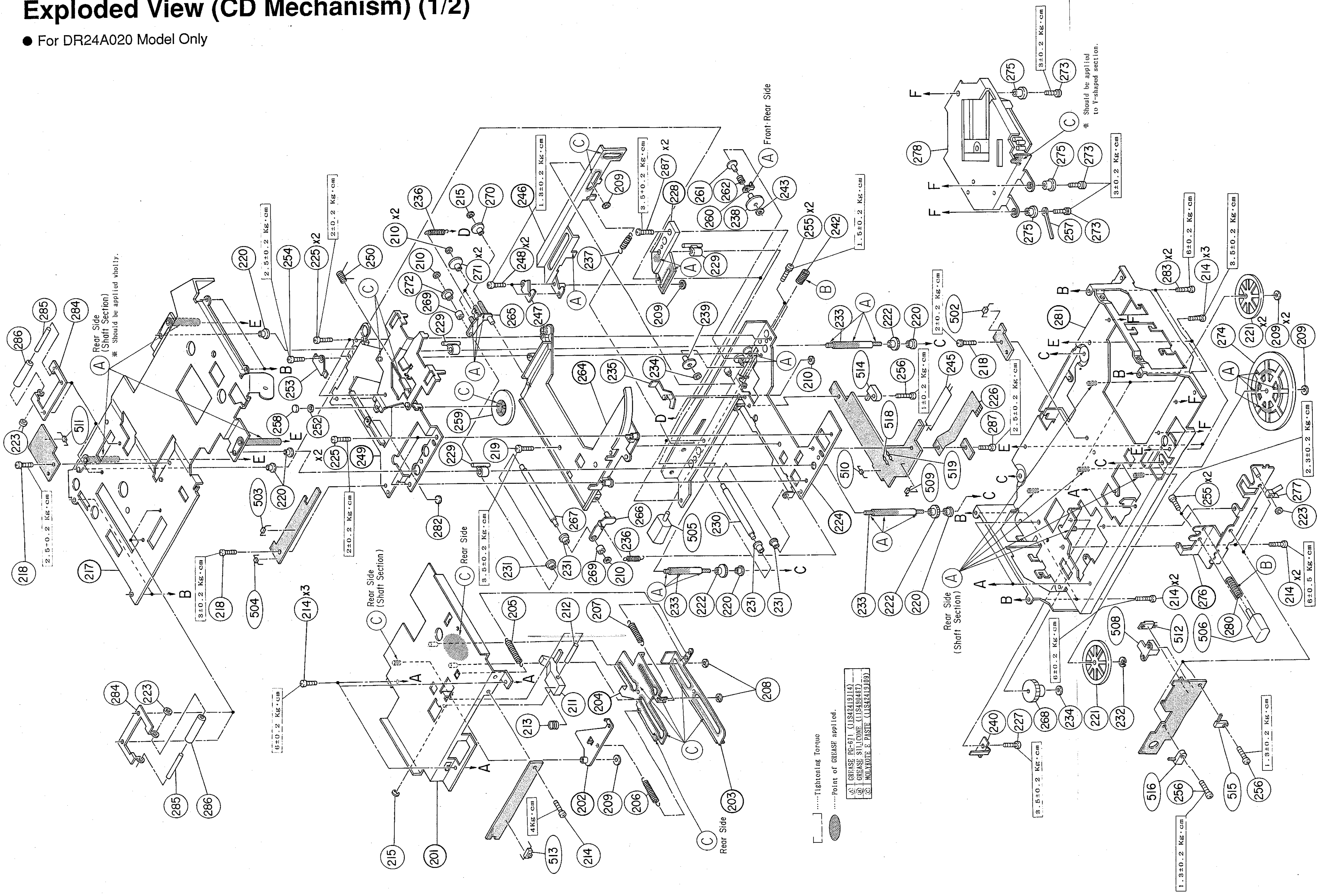
NOTE : The parts without part numbers are not supplied.

Symbol No.	Index	Part No.	Description		
306	3-A	04B41345P02	Washer, Lock (M1. 7)		
307	2-A	41A10928W03	Spring, Shaft-150		
308	3-B	43A13508W01	Spaceer, Shaft		
309	2-B	47A10927W01	Shaft, Screw		
310	2-A	84T15149W01	FPC Actuate P. C. Board		
311	2-A	03S40014G66	Screw, W/Washer (M2 × 3. 5)		
312	2-B	01T70458F02	Assy., GND Wire		
313	4-C	75A21138W01	Sheet, Shaft		
315		75A12210W01	Rubber, Cushion		
316	3-C	47A20146W01	Shaft, Pick-Up-50°		
317	3-D	07A10921W01	Bracket, Shaft		
318		03S40014G62	Screw, W/Washer (M2 × 3)		
319	2-C	07B10923W01	Bracket, Screw		
320		03D40121T38	Screw, W/Double Washer (M2 × 5)		
321	1-B	03S40014G69	Scerw, W/Washer (M2 × 8. 5)		
322	3-C	41C10925W02	Spring, Nut		
324	3-C	47A21175W01	Shaft, Pick-Up-50° (B)		
325	4-C	14S81482F10	*Insulator, Cover*		
Miscellaneous					
501	4-C	88T15309W01	Pick-Up Unit SF-87. 5		
502	2-F	48T16057W01	LED, AN501 (RED)		
503	3-B	48T16057W01	LED, AN501 (RED)		
504	4-B	48T16057W01	LED, AN501 (RED)		
505	3-D	59T90879F01	Motor, Load 6V-260mA (LOADING)		
506	4-G	59T15716W01	Motor, Load 8V-330mA (ELEVATOR)		
507	2-B	59T52973F03	Motor, Servo 6V-210mA (SLED)		
508	4-G	48T15722W01	Interrupter, Photo GP1S51		
509	3-F	48T15938W03	Transistor, Photo PS5022-B1		
510	3-E	48T15938W03	Transistor, Photo PS5022-B1		
511	3-A	48T15938W02	Transistor, Photo PS5022		
512	4-G	48T51089F04	Transistor, 2SA937		
513	5-D	40T10876W12	Switch, Tact SKHLAJ (EJECT)		
514	3-E	40T71025F01	Switch, Detector (LOADING)		
515	5-G	40T71025F01	Switch, Detector (HOME POSITION)		
516	5-G	40T71025F01	Switch, Detector (MAGAZINE)		
517	1-C	40T71025F01	Switch, Detector (LIMIT)		

NOTE : The parts without part numbers are not supplied.

Exploded View (CD Mechanism) (1/2)

- For DR24A020 Model Only


1
2
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201
202
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204
205
206
207
208
209
210 x2
211
212
213
214 x3
214 x2
215
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218
219
220
221 x2
222
223
224
225 x2
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243
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248 x2
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271 x2
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278
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281
282
283 x2
284
285
286
287 x2
502
503
504
505
506
508
509
510
511
512
513
514
515
516
518
519
A
B
C
D
E
F
Rear Side (Shaft Section)
※ Should be applied wholly.
Front·Rear Side
※ Should be applied to V-shaped section.
Rear Side
Rear Side (Shaft Section)
C Rear Side
C Rear Side (Shaft Section)
2.5±0.2 Kg·cm
2±0.2 Kg·cm
1.8±0.2 Kg·cm
3.5±0.2 Kg·cm
1.5±0.2 Kg·cm
3±0.2 Kg·cm
6±0.2 Kg·cm
8.5±0.2 Kg·cm
2.3±0.2 Kg·cm
1±0.2 Kg·cm
6±0.5 Kg·cm
4Kg·cm
1.3±0.2 Kg·cm
3.5±0.2 Kg·cm

[ ] ……Tightening Torque

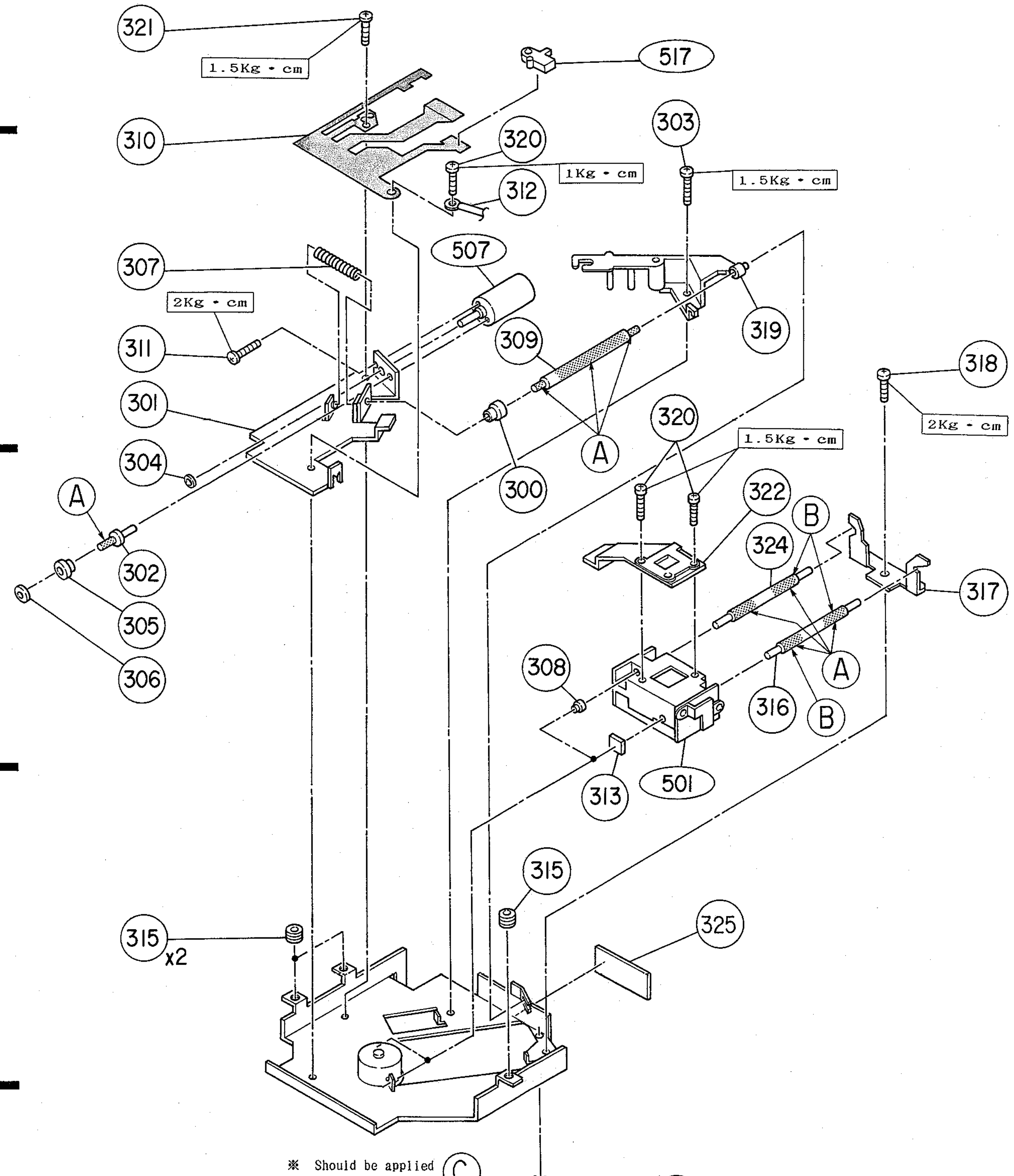
▨ ……Point of GREASE applied.

Ⓐ	GREASE PG-671 (11S42419J14)
Ⓑ	GREASE SILICONE (11S490487)
Ⓒ	MOLYKOTE E PASTE (11S42419J09)

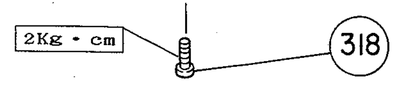
A | B | C | D | E | F | G | H

Exploded View (CD Mechanism) (2/2)

- For DR24A020 Model only


1
2
3
4
321
1.5Kg • cm
517
310
320
1Kg • cm
312
303
1.5Kg • cm
307
507
2Kg • cm
311
309
319
301
304
300
A
320
1.5Kg • cm
318
2Kg • cm
A
302
305
306
322
324
B
317
308
A
316
B
313
501
315
315
x2
325
※ Should be applied to V-shaped section.
C
323

5



▭ ······Tightening Torque

▨ ······Point of GREASE applied.

Ⓐ	GREASE PG-671 (11S42419J14)
Ⓑ	MOLYKOTE OIL 6329 (11S40390G22)
Ⓒ	MOLYKOTE E PASTE (11S42419J09)

Memo

CD Mechanism Assembly Parts List

<For DR24A02A/030/040 Model Only>

Symbol No.	Index	Part No.	Description		
205	4-D	41B11514W04	Spring, Extension		
206	5-D	41B11514W05	Spring, Extension		
207	4-D	41B11514W06	Spring, Extension		
208	4-E	04B41345P39	Washer, Lock (M3. 5)		
209		04B41345P04	Washer, Lock (M2. 6)		
210		04B41345P02	Washer, Lock (M1. 7)		
211	4-D	45A11483W01	Arm, Lock Magazine		
212	4-D	47A11405W01	Shaft, Arm Lock		
213	4-D	41A11480W02	Spring, Compression		
214		03S44205G30	Screw, Pan (M2. 6 × 4)		
215		04C42091G06	Ring, "E" (M1. 5)		
218		03S44205G99	Screw, Bind (M2 × 3)		
219	3-C	03S44205G87	Screw, Pan (M2 × 4)		
220		43A11271W01	Bearing, Screw Elevator		
221		44B11282W01	Gear, Idle		
222		44A11277W01	Gear, Screw		
223	3-H	04B41345P01	Washer, Lock (M1. 2)		
225		03S38013W07	Screw, Pan (M2 5 8. 5)		
226	3-F	84T11243W01	EPC Elevator P. C. Board		
227	4-F	03S44205G95	Screw, Bind (M2 × 4)		
229		45A11284W01	Arm, Elevator		
230	3-E	01A40510W01	Assy., Shaft Roller Under		
231		43A11272W01	Bush, Roller		
232		04C42091G11	Ring, "E" (M2. 5)		
233		47A12135W01	Shaft, Screw Elevator		
234		04B41345P13	Washer, Lock (M1. 7)		
235	3-D	01A11565W01	Assy., Rivet Arm Switch		
236		41B11514W08	Spring, Extension		
237	2-D	41B11514W02	Spring, Extension		
238	2-E	44A11481W01	Gear, Lever Middle		
239	2-E	44B22139W01	Gear, Lever		
240	4-F	41A31495W01	Spring, Elevator		
242	2-E	44A11281W01	Worm		
243	2-E	04B41345P22	Washer, Lock (M2. 6)		
245	3-F	30T73687F17	Wire, Parallel (3P)		

Symbol No.	Index	Part No.	Description		
247	2-D	45A11441W01	Arm, Block A Magazine		
248	2-D	03S94385F01	Screw, Pan (M1.7 × 2. 3)		
250	2-C	41A11559W01	Spring, Torsion		
252	3-B	04B41345P24	Washer, Lock (M2. 1)		
253	3-B	07A31787W01	Plate, Top		
254	2-B	03S44205G94	Screw, Pan (M1.7 × 2)		
255		03S40014G62	Screw, W/Washer (M2 × 3)		
256		03S10042W06	Screw, Pan (M2 × 7)		
257	2-G	29C41045P09	Lug, Wrap Around		
258	3-B	43A41006F01	Spacer, Polyslider		
259	3-C	01A31782W01	Assy., Rivet Clamper		
260	2-E	45A31789W01	Arm, Kick Gear		
261	2-E	43A11485W01	Bush, Gear		
262	2-E	41A11480W01	Spring, Compression		
265	2-D	01A31779W01	Assy., Rivet Arm Roller (L)		
266	3-D	01A31780W01	Assy., Rivet Arm Roller (R)		
267	3-D	01A40509W01	Assy., Shaft Roller		
268	4-F	44A11275W01	Worm, Wheel		
269		47A11302W01	Roller, Lifter		
270	2-C	44A11278W01	Worm		
271	2-C	44A11279W01	Gear, Roller Middle		
272	2-C	44A11280W01	Gear, Loading Roller		
273		03S38013W10	Screw, Pan (M2 × 7)		
274	2-G	44B11283W01	Gear, Timing		
275		43A12211W01	Sleeve, Cushion		
277	3-H	45A31790W01	Arm, Switch HP		
□ 278	2-F	01V43800W61	Assy., Drive Unit		
○ 278	2-F	01V43500W73	Assy., Drive Unit		
△ 278	2-F	01V43500W73	Assy., Drive Unit		
280	4-G	44A11276W01	Worm		
282		03S44205G96	Screw, Bind (M2 × 5)		
283		03S40014G12	Screw, W/Washer (M2. 6 × 4)		
300	3-B	44A90998F01	Gear, Screw		
301	2-A	07C10922W02	Bracket, Motor		
302	3-A	46A91007F02	Stud, Gear		

NOTE : The parts without part numbers are not supplied.

□ : For DR24A02A Model Only, ○: For DR24A030 Model Only, △: For DR24A040 Model Only, Others : Common.

Symbol No.		Index	Part No.	Description		
	303	2-C	03S40014G07	Screw, W/Washer (M2 × 4)		
	304	2-A	44A90996F01	Gear, Motor		
	305	3-A	44A90997F01	Gear, Middle		
	306	3-A	04B41345P02	Washer, Lock (M1. 7)		
	307	2-A	41A10928W03	Spring, Shaft-150		
	308		07A30961W01	Stopper, Shaft (B)		
	309	2-B	47A10927W02	Shaft, Screw		
□	310	1-A	84T15149W01	FPC Actuate P. C. Board		
○	310	1-A	84T45270W01	FPC Actuate P. C. Board		
△	310	1-A	84T45270W01	FPC Actuate P. C. Board		
	311	2-A	03S40014G66	Screw, W/Washer (M2 × 3. 5)		
	312	2-B	01T70458F02	Assy., GND Wire		
	313		03S70494F17	Screw, Pan (M1. 7 × 8)		
	315		75A12210W01	Rubber, Cushion		
	316	3-C	47A30925W01	Shaft, Pick-Up		
	317	1-B	07A40743W01	Bracket		
□	318	3-B	04S40075G61	Washer, Polyslider (M2. 1)		
○	318	3-B	04S40075G06	Washer, Polyslider (M2. 1)		
△	318	3-B	04S40075G06	Washer, Polyslider (M2. 1)		
	319	2-C	07B10923W01	Bracket, Screw (M2. 1)		
	320		03D40121T38	Screw, W/Double Washer (M2 × 5)		
	321	1-B	03S40014G69	Scerw, W/Washer (M2 × 8. 5)		
	322	3-C	41C10925W02	Spring, Nut		
Miscellaneous						
	501	4-C	88T15309W01	Pick-Up Unit SF-87. 5		
	502	2-F	48T16057W01	LED, AN501 (RED)		
	503	3-B	48T16057W01	LED, AN501 (RED)		
	504	4-B	48T16057W01	LED, AN501 (RED)		
	505	3-D	59T90879F01	Motor, Load 6V-260mA (LOADING)		
	506	4-G	59T15716W01	Motor, Load 8V-330mA (ELEVATOR)		
	507	2-B	59T52973F03	Motor, Servo 6V-210mA (SLED)		
	508	4-G	48T15722W01	Interrupter, Photo GP1S51		
	509	3-F	48T15938W03	Transistor, Photo PS5022-B1		
	510	3-E	48T15938W03	Transistor, Photo PS5022-B1		

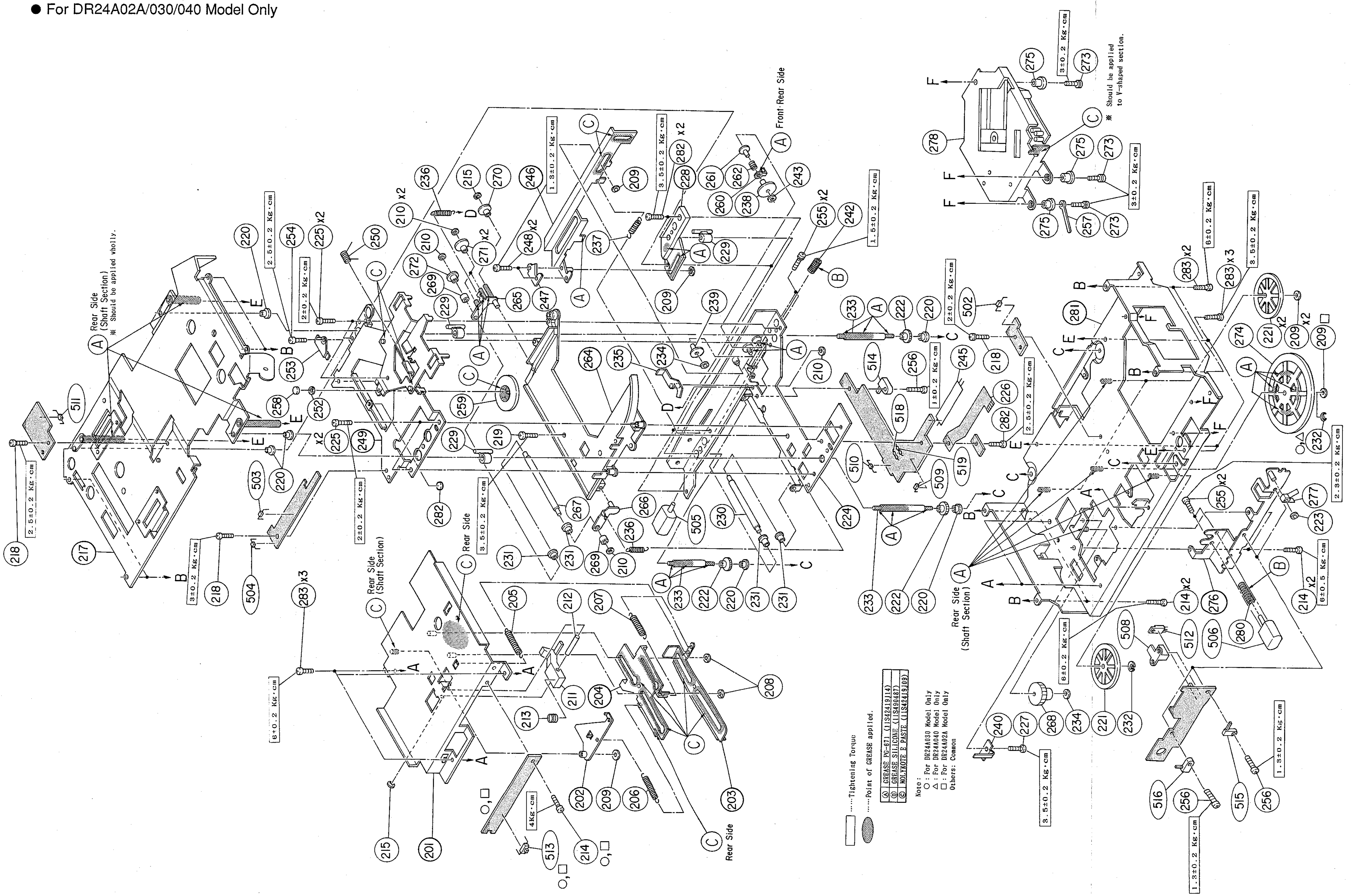
Symbol No.		Index	Part No.	Description		
	511	3-A	48T15938W02	Transistor, Photo PS5022		
	512	4-G	48T51089F04	Transistor, 2SA937		
□	513	5-D	40T10876W12	Switch, Tact SKHLAJ (EJECT)		
○	513	5-D	40T10876W12	Switch, Tact SKHLAJ (EJECT)		
	514	3-E	40T71025F01	Switch, Detector (LOADING)		
	515	5-G	40T71025F01	Switch, Detector (HOME POSITION)		
	516	5-G	40T71025F01	Switch, Detector (MAGAZINE)		
	517	1-C	40T71025F01	Switch, Detector (LIMIT)		

NOTE : The parts without part numbers are not supplied.

□ : For DR24A02A Model Only, ○ : For DR24A030 Model Only, △ : For DR24A040 Model Only, Others : Common.

Exploded View (CD Mechanism) (1/2)

- For DR24A02A/030/040 Model Only


1
2
3
4
5
A
B
C
D
E
F
G
H
Rear Side
(Shaft Section)
※ Should be applied wholly.
Front·Rear Side
Rear Side
Rear Side
(Shaft Section)
Rear Side
Rear Side
(Shaft Section)
※ Should be applied to V-shaped section.
2.5±0.2 Kg·cm
3±0.2 Kg·cm
2±0.2 Kg·cm
1.8±0.2 Kg·cm
3.5±0.2 Kg·cm
1.5±0.2 Kg·cm
1±0.2 Kg·cm
6±0.2 Kg·cm
4Kg·cm
6±0.5 Kg·cm
2.3±0.2 Kg·cm
1.3±0.2 Kg·cm
218
217
511
220
254
225 x2
253
258
252
225
249
503
504
218
283 x3
250
236
210 x2
215
270
D
271 x2
272
210
269
229
265
248 x2
247
246
237
209
228
282 x2
261
262
260
238
243
255 x2
242
239
235
234
264
259
219
229
282
267
266
236
231
269
210
505
230
224
233
222
220
231
502
218
256
245
514
518
226
282
510
509
519
275
273
278
257
281
283 x2
283 x3
274
221 x2
209 x2
209 □
232
○,△
277
223
214 x2
276
280
506
512
508
221
232
234
268
227
240
516
256
515
256
205
212
207
208
211
204
213
202
209
206
203
201
215
513
214
○,□
A
B
C
E
F

▭ ……Tightening Torque

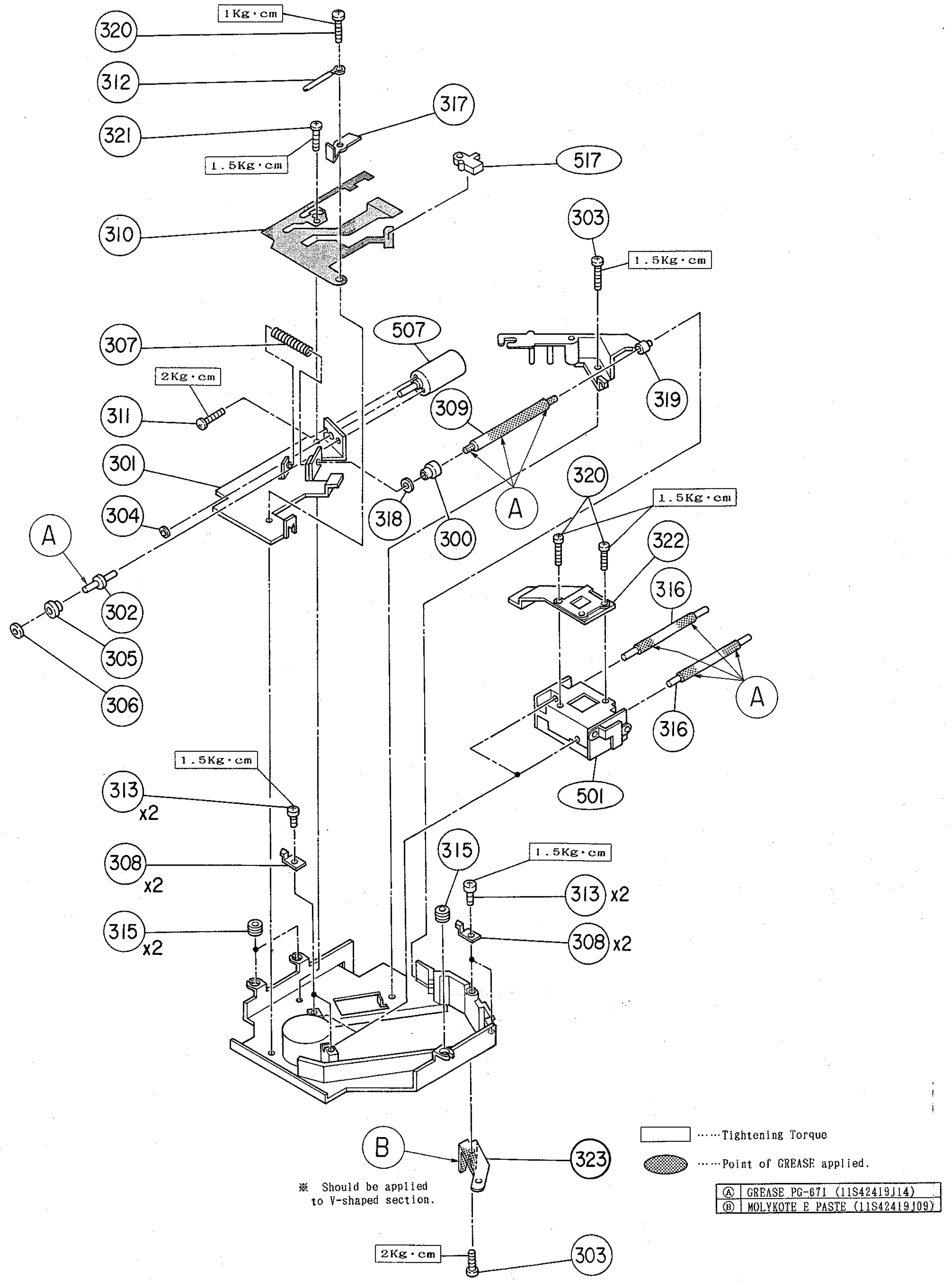
▨ ……Point of GREASE applied.

Ⓐ	GREASE PG-671 (11S42419J14)
Ⓑ	GREASE SILICONE (11S4904871)
Ⓒ	MOLYKOTE E PASTE (11S42419J09)

Note:
○ : For DR24A030 Model Only
△ : For DR24A040 Model Only
□ : For DR24A02A Model Only
Others: Common

Exploded View (CD Mechanism) (2/2)

- For DR24A02A/030/040 Model only


320
1Kg・cm
312
317
321
1.5Kg・cm
517
310
303
1.5Kg・cm
307
507
2Kg・cm
311
309
319
301
A
304
318
300
320
1.5Kg・cm
A
322
302
316
305
A
306
316
501
1.5Kg・cm
313
x2
308
x2
315
1.5Kg・cm
313 x2
308 x2
315
x2
B
323
2Kg・cm
303
1
2
3
4
5
A
B
C
D

※ Should be applied
to V-shaped section.

▭ ……Tightening Torque

▨ ……Point of GREASE applied.

Ⓐ	GREASE PG-671 (11S42419J14)
Ⓑ	MOLYKOTE E PASTE (11S42419J09)

Memo